S. HRG. 99-118 PT. 3

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1986

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

NINETY-NINTH CONGRESS

FIRST SESSION

ON

H.R. 2959

AN ACT MAKING APPROPRIATIONS FOR ENERGY AND WATER DEVELOPMENT FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1986, AND FOR OTHER PURPOSES

PART 3 (Pages 1529-2703)

NONDEPARTMENTAL WITNESSES

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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1986

THURSDAY, MARCH 28, 1985

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:04 a.m. in room SD–192, Dirksen Senate Office Building, Hon. Dennis DeConcini presiding.

Present: Senators DeConcini and McClure.

NONDEPARTMENTAL WITNESSES

CENTRAL ARIZONA PROJECT

Senator DECONCINI. The Energy and Water Development Appropriations Subcommittee will come to order. I want to first thank Chairman Hatfield, who is the chairman of this subcommittee, and the ranking minority member, Senator Johnston, for scheduling this hearing today.

I am pleased to have the opportunity to listen to testimony today on my favorite subject that everyone on this committee knows so well, the Central Arizona Project.

The subcommittee will take testimony today from the public witnesses from the State of Arizona. Rather than go through my full statement, I want to welcome the Governor, and I will put my full statement in the record. I also have a letter from Senator Goldwater that I will place in the record without objection. Senator Goldwater concurs with the testimony given here by the Governor and other State and water representatives, and regrets he can't be here because of Armed Services hearings that commenced at 9 a.m. this morning.

[The statement and letter follow:]

STATEMENT OF SENATOR DECONCINI

The Subcommittee on Energy and Water Development will take testimony today from public witnesses from the State of Arizona. As a member of this subcommittee, I am particularly delighted that Chairman Hatfield asked me to chair this morning's hearing because the issues that will be discussed concern projects of great interest and importance to me and the residents of Arizona.

The Governor of Arizona, the Honorable Bruce Babbitt, will be our first witness. The committee will be happy to take statements for the hearing record submitted by representatives of the CAWCD, irrigation and drainage districts, and others who have an interest in the CAP.

Good morning, Governor. It is a pleasure to have you here today. Your leadership,

dedication, and personal involvement in the progress of the Central Arizona Project over the years has been of great benefit to the State of Arizona. I was surprised and disappointed to learn of your decision not to seek further public office in Arizona after your term expires in 1986 at this time. Your many contributions to the CAP, ground water management, and water conservation accomplishments in the State will be sorely missed by all, including this Senator. The leadership role you have taken, working hand in hand with the Arizona congressional delegation, in the negotiation of an up-front cost-sharing proposal for the completion of plan 6 has been extremely helpful and is appreciated. We have been fortunate to have you at the helm during the formulation of many difficult water policies. I am confident, however, that whatever your future holds, you will find ways to continue your involvement in issues of importance to our great State.

I look forward to hearing your update on the achievements that have been made to date on Arizona projects and your assessment of future needs.

Before I turn the hearing over to you, I want to briefly take this opportunity to summarize some of my own personal observations on the fiscal year 1986 budget request.

We are fast approaching a point in time when Arizonans will receive their first delivery of Colorado River water via the CAP. Reclamation officials have done a fine job in moving this important project along. However, the progress we have made to date was only accomplished by the combined efforts of the entire Arizona congressional delegation and the tireless contributions made by all of you here today. While we have overcome many sizeable obstacles that have stood in the path to meeting our State's growing water needs, the hurdles that lie ahead are equally as important and equally as difficult as those we have encountered in the past.

We are entering tough fiscal times and the delegation in Washington will have to continue to defend the benefits of the CAP. OMB, the White House, and certain Members of Congress are searching for ways to cut water project financing to help resolve our Federal budgetary problems. Arizona is doing its share in attempting to piece together a local financing package. The task of State leaders will be to work closely with the congressional delegation to insure that Arizona gets its fair share of the Federal pie for our agreed upon priorities. We must press for the inclusion of all critical elements in the final project, bearing in mind the Federal commitments that have been made to all water interests in Arizona. Adequate Federal financing to move ahead on all features of plan 6, including safety of dams, and terminal regulatory storage for Tucson, is absolutely essential.

The Bureau of Reclamation is confident the project can stay on track with the $173.5 million requested for fiscal year 1986, plus an additional $4 million for the Tucson division, to be found in savings elsewhere in Reclamation accounts. I wish I were as confident as the Bureau.

Reclamation has admitted it has an additional capability of $55.9 million for construction activities Bureau-wide. Of that figure, $20.9 milion is capable of being utilized on the CAP; $12.4 million for the water and power components of the project, and $8.2 million for non-Indian distribution systems. Given the enormous benefits provided to the Nation as a whole through Reclamation activities, I believe the Congress ought to make every effort to see that Reclamation is given the financial resources necessary to take full advantage of its construction capability. We cannot afford to be shortsighted. Either we pay the costs for project development today, or we pay even greater costs later to resolve a future water crisis. The sooner projects like the CAP are completed, the sooner the Federal Government will realize a return on its financial investments.

In the case of Arizona, raising the appropriation for the CAP to the total capability level of $194.2 million in fiscal year 1986, would still result in a slight reduction in the amount appropriated in fiscal year 1985.

We must be cognizant of our funding limitations due to spiralling Federal deficits. But we must treat all important and worthwhile programs financed by the Federal Government fairly. You can be assured that this Senator will do all in his power to convince members of this subcommittee to make funding for Reclamation construction activities a priority. This job will not be easy. It is a difficult task to convince certain of my colleagues of the long-term benefits reclamation and water development have for the entire country.

The wisdom, guidance, and insight from individuals like yourselves and the continued joint bipartisan efforts of State and congressional leaders will help us to appropriate those levels of funds that truly respond to our Nation's water development needs. When we mark up the fiscal year 1986 Energy and Water appropriations bill, you may be assured I will keep Arizona's best interests in mind. As in the past, we in the delegation will continue the struggle for full capability.

Governor Babbitt will now address the committee on behalf of the State of Arizona.

LETTER FROM SENATOR GOLDWATER

MARCH 28, 1985.

Hon. DENNIS DECONCINI,
U.S. Senate, Washington, DC.

DEAR DENNIS: Please convey to Governor Babbitt and to the other folks from Arizona who are present at the hearing this morning my sincere regrets at not being there with you. I have to chair a hearing of the Armed Services Committee at 9 a.m., and we have another hearing to mark up the Department of Defense authorization bill at 10 a.m.

I am confident that we can keep the Central Arizona Project on schedule with all of us working hard together, and I look forward to seeing everyone out in Arizona.

With best wishes,

BARRY GOLDWATER.

INTRODUCTION OF GOV. BRUCE BABBIT OF ARIZONA

Senator DECONCINI. Governor, we welcome you here. Your leadership and that of the State water commissioner on behalf of the CAP has been outstanding and we welcome your testimony here today.

I do have a few questions for you when you finish your statement on how the administration's budget request for the CAP will affect the project. We are hopeful that the committee make alterations as necessary to allow us to keep the project on schedule.

The Secretary of Interior did testify a couple of weeks ago that the reduction in funding would not delay the Tucson Aqueduct in 1986.

We hope that you, Mr. Steiner, or others can address that question, either in your testimony or in questions afterward. So we welcome all of you here from Arizona. This is a very important period of time for the Central Arizona Project because Colorado River water is due to be delivered to the Phoenix area later this year and it is paramount that we continue to move forward. The Appropriations Committee will play a vital role to insure that there is adequate funding available to maintain the delivery schedules as projected so we don't fall too far behind.

Governor Babbit?

STATEMENT OF HON. BRUCE BABBIT, GOVERNOR OF ARIZONA

ACCOMPANIED BY WESLEY E. STEINER, DIRECTOR, ARIZONA DEPARTMENT OF WATER RESOURCES

Governor BABBIT. Senator, thank you. I recognize that Wes Steiner, Tom Barr, Hank Raymond, Buck O'Reilly, and all of us being here to plead for the Central Arizona Project before you is somewhat like preaching to the choir. I will acknowledge your efforts and your complete familiarity with this project and be relatively brief.

I have rounded up the usual suspects with supporting statements: John Smith, Norman Pretzer, Robert Barcello, our friends from the Metropolitan Water District of Southern California, Municipal Water Users Association, CAP Association, Southern Arizona Water Resources Association, various chambers of commerce, and, if I may, I would simply submit those statements together with my formal statement for the record.

Senator DECONCINI. Without objection, they will appear in the record following your statement.

[The statements follow:]

STATEMENT OF GOV. BRUCE BABBITT OF ARIZONA

Mr. Chairman, and members of this important committee, I appreciate the opportunity to appear before you once again in support of funding for continued construction of the Central Arizona Project. Excellent progress has been made since my last appearance before this Committee on all fronts on the CAP.

The Granite Reef aqueduct is now completed and spans 190 miles from Lake Havasu to the Salt River east of Phoenix. All four pumping plants on this reach of the delivery system are nearing completion. Pump testing has been initiated and is proceeding on schedule.

The Salt/Gila aqueduct, which links the Granite Reef and Tucson aqueducts, also nears completion. Testing of the pump units in its pumping plant will begin later this year.

Construction of the Tucson aqueduct has begun. All major contracts for reaches 1, 2 and 3 will be awarded this year. Public hearings have been held on the draft environmental impact statement and construction is scheduled to begin in fiscal year 1986 on the remaining reaches of the Tucson aqueduct. Completion of the Tucson aqueduct and water deliveries to the Tucson area are expected in 1991.

Contracting for CAP water by municipal, industrial and agricultural allottees is proceeding on schedule. Indications are that the demand for CAP water will far exceed the supply. M&I allottees have currently contracted for more than 409,000 acre-feet or 64 percent of the supply available for M&I use. Irrigated agriculture has already contracted for nearly 65 percent of the Project's agricultural supply.

In an effort to be ready to receive CAP water as soon as it is available, irrigation districts are constructing distribution systems involving more than 500 miles of canals, 50 pump stations and 200 bridges. The cities of Phoenix, Tucson, Tempe, Glendale, Scottsdale, Mesa and Chandler are also anxious to receive CAP water. They are currently designing and constructing new water treatment plants and system additions to utilize their CAP supplies.

Completion of the CAP at the earliest practicable date is vital to our state. Water is being consumed in Arizona at almost twice the replenishment rate. The difference represents a continuing overdraft of irreplaceable groundwater resources. I am pleased to report, however, that we are taking the necessary actions to overcome this "deficit spending" approach to water demand. In 1980 Arizona adopted comprehensive, strict groundwater management legislation designed to assure a balance between water use and supply by year 2025. Although implementation of these statutes and the management program authorized thereby is proceeding well, achievement of the goal of a balance between water supply and consumption is dependent upon timely completion of the Central Arizona Project and diversion of our remaining entitlement to waters of the Colorado River into central Arizona. Therefore, it is imperative that this Project remain on schedule.

Completion of the delivery system of the Central Arizona Project all the way from the Colorado River to the terminus near Tucson is in sight. First deliveries will be made into the Harquahala and Salt River valleys and the rate at which reimburseable costs are repaid will increase later this year. This will be an exciting time for those who have worked so long to convert this dream to the reality of flowing Colorado River water in central Arizona. Still, there is much work to be done to complete the authorized features of the Project. The Tucson aqueduct, Plan 6 dams and non-Indian distribution systems are all essential for Arizona to utilize efficiently our Colorado River entitlement. The citizens of Arizona are currently working to build a consensus on local funding options. Local funds would be used to supplement future federal appropriations. The Bureau and the City of Tucson are planning to work together on special investigations on reliable and operational storage needs for Tucson CAP deliveries. Language is necessary in this appropriations bill for the Bureau to begin those investigations. Local funds would again be used to supplement federal appropriations in this work.

We are anxious to get on with repayment of the costs of building the Central Arizona Project. We desperately need the water it will provide. We urge you to appropriate the funds required to keep Central Arizona Project on schedule.

Last year's projections anticipated that $250 million would be required in FY 1986 to keep Project construction on schedule. The need to reduce budget deficits makes it imperative that we temper our expectations. A reduction, however, from this year's appropriation level of $196 million to the Administration budget request of $173.5 million would not provide adequate funds to maintain the construction schedule for the Tucson aqueduct, Plan 6 and the non-Indian agricultural distribution systems. Project construction would suffer a significant loss of momentum.

Hence, I urge that the Committee increase the President's request by $20 million to a Project total of $193.5 million. At this level appropriations for the CAP for FY 1986 would be slightly less than for the current fiscal year. It is my understanding that the Bureau of Reclamation has the capability to perform this additional work. This amount is necessary to maintain Project construction, to ensure completion of the Tucson aqueduct by 1991, and to comply with the water delivery requirements of Title III of the Southern Arizona Water Rights Settlement Act of 1982 (96 Stat. 1285). Language in the FY 1986 CAP obligation authority should set forth completion of the main stem aqueduct all the way to Tucson as first priority for the expenditure of funds made available.

Funds appropriated by the Congress in FY 1984 and 1985 were reduced through "underfinancing" by 14 to 15 percent. In light of the sharp reduction that has already been made in the amount programmed as necessary in FY 1986 to keep the CAP on schedule, I urge that no underfinancing reductions be made in the CAP allocations for 1986.

Mr. Chairman, Congressional approval of the 1984 Reclamation Safety of Dams Act Amendments provided new and needed authority for the federal government to correct

deficiencies at some 60 structures in the west. Two of those federal reclamation dams are located on the Salt River in Arizona -- Theodore Roosevelt Dam 80 miles east of Phoenix and Stewart Mountain Dam 40 miles above the Phoenix metropolitan area.

We in Arizona were most pleased to note that the Department of Interior, in testimony before this Committee, requested $20 million in fiscal year 1986 for investigations, the preparation of modification reports and preconstruction activities as well as actual structural modifications on many of the dams included in the Bureau of Reclamation Safety of Dams Program. Among other things, that budget request includes $600,000 to continue preconstruction work on the Stewart Mountain Dam.

It is my understanding that the Bureau has the capability to perform closer to $3 million in preconstruction activities at Stewart Mountain Dam in fiscal year 1986 and I would strongly encourage this Committee and the Congress to increase the Bureau's request so that this critical project can be accelerated.

Mr. Chairman, I well remember a rainy evening five years ago last month when the Phoenix metropolitan area and the watershed above was inundated by a series of storms that produced record rain and runoff. On that occasion, with the advice and counsel of the Adjutant General of the State of Arizona and local water authorities, I issued an evacuation alert because we thought then that the Stewart Mountain Dam would fail. Fortunately, meteorologic conditions shifted abruptly and a tragedy of catastrophic proportions was averted. Nonetheless, those weather conditions might well occur again and that is why I urge you to permit the Bureau and the Salt River Project, which have recently signed a cost-sharing memorandum of understanding to proceed expeditiously with this important program.

In addition to funding for the Central Arizona Project and Safety of Dams I would ask your support for two other items in the President's budget. The Bureau of Reclamation budget contains $2.5 million for general investigations. Included in this request are funds to initiate work authorized by P.L. 98-434, the High Plains State Groundwater Demonstration Program Act. Arizona is desirous of participating in this program and therefore asks your support of this item in the Bureau's budget.

I also seek support for the Phoenix, Arizona and Vicinity Streams Program in the Corps of Engineer's budget. The remaining feature of this project is the Arizona Canal Diversion Channel which will provide protection to much of central Phoenix and Glendale. Construction is scheduled to begin in September of this year and to continue for six years. It is important to the safety and welfare of much of the Phoenix metropolitan area that this schedule be maintained.

We thank the Committee for its strong support over the years for water resource development in our state.

STATEMENT OF NORMAN PRETZER, PRESIDENT, CENTRAL ARIZONA IRRIGATION AND DRAINAGE DISTRICT

Mr. Chairman and Members of the Subcommittee:

My name is Norman Pretzer. I am President of the Board of Directors of the Central Arizona Irrigation and Drainage District of Pinal County, Arizona. On behalf of the Board of Directors of the District, I wish to thank you for the opportunity to appear before you today and to express our full support of the Governor's statement which has been presented to you.

Our District comprises about 88,000 acres of rich irrigated land located in south-central Pinal County. In common with other irrigated areas in the CAP service area, our District has experienced severe groundwater overdraft manifest in an ever-increasing lowering of groundwater levels accompanied by land subsidence. The water supply from CAP which we have been looking forward to for so many years will mitigate these problems and permit the continuance of our agricultural economy.

In September 1983, the landowners in our District by an overwhelming majority authorized the execution of water supply and repayment contracts with the United States prerequisite to construction of our distribution system project, and the issuance of $22.7 million of general obligation bonds to provide for the District's financial contribution to the Project. The Project has a total estimated cost of $83.6 million. The $22.7 million bond issue was sold in the spring of 1984 and utilizing a portion of the proceeds of this issue, design engineering has proceeded under an accelerated schedule.

Mr. Smith, President of the Maricopa-Stanfield Irrigation & Drainage District, will relate to you in his statement that bids have been opened on the first unit of construction of facilities to serve our District, namely Division A of the multiple-user Santa Rosa Canal. This Canal heads at a turnout on the Tucson Aqueduct and will serve approximately 17,000 acres in the northerly portion of our District, as well as approximately 88,000 acres in the Maricopa-Stanfield Irrigation & Drainage District, the Ak-Chin and Papago Chuichu Indian Communities, and water supply systems serving the communities of Eloy, Arizona City, Casa Grande and Coolidge in southern Pinal County. Design and right-of-way acquisition activities are well under way on the distribution system to serve this north area, and we are scheduled to award a contract for its construction in August of this year. Simultaneously, surveying and design work is proceeding on our Central Main Canal which heads at a turnout on the Tucson Aque-

duct about 6 miles downstream from the Santa Rosa Canal turnout. This system will serve approximately 50,000 acres in the central portion of our District. Our South Main Canal, scheduled for later construction, will extend from the Tucson Aqueduct some 15 miles beyond the Central Main Canal, and will serve the remaining 21,000 acres of the District.

Our North System will be operative in 1987 and construction will be completed on the entire Project in 1990. Meeting this schedule is, of course, contingent on adequate appropriations by the Congress.

We wish to thank the Subcommittee for its consideration and past generosity to the Central Arizona Project. With timely appropriations by Congress and the use of our bond money, we are confident that our partnership arrangement with the United States will bring long-awaited CAP water as scheduled to our land and the Indian communities.

STATEMENT OF JOHN E. SMITH, PRESIDENT, MARICOPA-STANFIELD IRRIGATION AND DRAINAGE DISTRICT

Mr. Chairman and Members of the Subcommittee:

My name is John E. Smith. I am President of the Board of Directors of the Maricopa-Stanfield Irrigation & Drainage District of Pinal County, Arizona. On behalf of the Board of Directors of the District, I wish to thank you for the opportunity to appear before you today and to express our full support of the Governor's statement which has been presented to you.

Our District comprises about 88,000 acres of highly productive irrigated land located in northwestern Pinal County. In common with other irrigated areas in the CAP service area, our District has experienced severe groundwater overdraft manifest in an ever-increasing lowering of groundwater levels accompanied by land subsidence. The water supply from CAP which we have been looking forward to for so many years will mitigate these problems and permit the continuance of our agricultural economy.

In September 1983, the landowners in our District by an overwhelming majority authorized the execution of water supply and repayment contracts with the United States prerequisite to construction of our distribution system project, and the issuance of $26 million of general obligation bonds to provide for the District's financial contribution to the Project. The Project has a total estimated cost of $97.5 million. The $26 million

bond issue was sold in the spring of 1984 and, utilizing a portion of the proceeds of this issue, design engineering has proceeded under an accelerated schedule. On March 14th of this year, bids were opened on the first unit of construction of the Project, namely Division A of the Santa Rosa Canal, 25 miles in length.

The Santa Rosa Canal with a total length of 56 miles, is a multiple-user facility and will serve not only our District, but the Ak-Chin and the Papago Chuichu Indian Communities, a portion of the Central Arizona Irrigation and Drainage District and some of the nearby Pinal County communities.

I am pleased to report to you that the low bid on this unit of construction--$20.8 million, is below the Engineer's Estimate and within the fund-allowance for this unit of construction in the District's 1982 Project Feasibility Report.

Currently, design and right-of-way activities are nearing completion on the 34-mile Division B reach of the Santa Rosa Canal, and on our West Distribution System which will serve some 15,000 acres of District lands. Under our schedule, water will be flowing in the Santa Rosa Canal in the summer of 1987 and our entire system will be completed in 1989. Meeting this schedule and performing the construction work in the most cost-efficient manner is, of course, contingent upon adequate appropriations by the Congress, to more fully utilize the capability of the Bureau of Reclamation.

We wish to thank the Subcommittee for its consideration and past generosity to the Central Arizona Project. With timely appropriations by Congress and the use of our bond money, we are confident that our partnership arrangement with the United States will bring long-awaited CAP water as scheduled to our lands and the Indian communities.

STATEMENT OF ROBERT F. BARCELLO, PRESIDENT, NEW MAGMA IRRIGATION AND DRAINAGE DISTRICT

My name is Robert F. Barcello. I am President of the Board of Directors of the New Magma Irrigation & Drainage District of Pinal County, Arizona. On behalf of the Board of Directors of the District, I wish to thank you for the opportunity to appear before you today and to express our full support of the Governor's statement which has been presented to you.

Our District comprises about 27,000 acres of highly productive irrigated land located in north-central Pinal County. A portion of our District lies in Maricopa County. In common with other irrigated areas in the CAP service area, our District has experienced severe groundwater overdraft with ever-increasing lowering of groundwater levels. The water supply from CAP which we have been looking forward to for so many years will mitigate this problem and permit the continuance of our agricultural economy.

In September 1983, the landowners in our District by an overwhelming majority authorized the execution of water supply and repayment contracts with the United States prerequisite to construction of our distribution system project, and the issuance of $7.1 million of general obligation bonds to provide for the District's financial contribution to the Project. The Project has a total estimated cost of $21.9 million. The $7.1 million bond issue was sold in the spring of 1984 and utilizing a portion of the proceeds of this issue, design engineering has proceeded under an accelerated schedule. On March 6th of this year, bids were opened on the first unit of construction of the Project--the northern two of our four laterals extending into the District from the Salt-Gila Aqueduct.

We are pleased to report to you that the low bid on this unit of construction--$3.5 million, is well within funds which were allocated for this unit of construction in the District's 1982 Project Feasibility Report.

Design and right-of-way activities are well along on the final two laterals of our system and we are scheduling an award of contract for their construction in August of this fiscal year. Our entire system will be operative in the summer of 1986, and we anticipate delivering a full irrigation supply to all our lands in 1987.

We wish to thank the Subcommittee for its consideration and past generosity to the Central Arizona Project. With adequate appropriations by Congress for fiscal year 1986 and the use of our bond money, we will achieve our long-time goal of delivering an essential supply of CAP water to our lands.

LETTER FROM WILLIAM H. WHEELER, EXECUTIVE DIRECTOR, CENTRAL ARIZONA PROJECT ASSOCIATION

March 20, 1985

RECEIVE
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GOVERNOR'S OFFICE

Hon. Bruce Babbitt
Governor
State of Arizona
Phoenix, AZ 85007

Dear Governor Babbitt:

As you know, a meeting was held with the major Central Arizona Project water users on March 19, 1985 in Casa Grande to review your draft statement on 1986 appropriations. Those present went over the statement in detail and suggested a few minor modifications which I understand your staff is incorporating into the final statement.

Do to the shortage of time for all of the participants at the meeting to communicate their approval and support of the statement to you in writing, they asked me to do so in this letter.

Enclosed is a list of the people present and organizations they represented in the meeting.

Sincerely,

Wm H. Wheeler

Wm. H. Wheeler

WHW/ms
enclosure

PARTICIPANTS IN DISCUSSION OF GOV. BABBITT'S DRAFT STATEMENT

ON 1986 APPROPRIATIONS

CASA GRANDE, ARIZONA MARCH 19, 1985

Mr. John E. Smith
President
Maricopa-Stanfield Irrigation
& Drainage District

Mr. Bob Barcelló
New Magma
Irrigation & Drainage District

Mr. George Britton
Executive Assistant
to Gov. Babbitt

Mr. Bill Chase
Water Resources Advisor
City of Phoenix

Mr. Roger Manning
Executive Director
Arizona Municipal Water
Users Association

Mr. Webb Todd
President
Central Arizona Project
Association

Mr. Wes Steiner
Director
Arizona Department
of Water Resources

Mr. Jay Rhodes
Director
Central Arizona Water
Conservation District

Mr. Joe Falbo
Manager
Maricopa County Municipal
Water Conservation
District #1

Mr. Marvin Cohen
Special Counsel
City of Tucson

Mr. Bill Ealy
Assistant City Manager
City of Tucson

Ms. Marybeth Carlile
Executive Director
Southern Arizona Water
Resources Association

Mr. John Rhodes
Central Arizona Water
Conservation District

Mr. Hank Raymond
Chairman of the Board
CAPA

Mr. Tom Clark
General Manager
Central Arizona Water
Conservation District

Mr. Jim Sweeney
Manager
Central Arizona Irrigation
& Drainage District

Ms. Maryann Nicolli
Central Arizona Water
Conservation District

Mr. Bill Wheeler
Executive Director
CAPA

Statement of the Metropolitan Water District of Southern California

By January 1, 1986, the first deliveries of Colorado River water will have been made to the Phoenix area through the Granite Reef Aqueduct. This monumental achievement is a tribute to the foresight and tenacity of the public leaders of Arizona and their hopes to build a healthy economy and environment for their residents, their business and their farms.

It is also a tribute to the Bureau of Reclamation, an organization that is responsible for much of the economy in the West. In an area of scarce and seasonal rainfall, their projects have contributed immeasureably to the success of the many Americans who call the West home. The small investment in these projects compared to other federal expenditures - about the cost of the Washington Metro System - has produced enormous returns to the entire nation. The continued attacks on the Bureau are a disservice to the country and we urge your committee's continued support of its activities.

Arizona is now requesting adequate funding levels to continue its aqueduct to Tucson. This area which relies on diminishing supplies of groundwater needs its share of the project water supply on an expeditious schedule. Reducing funding levels today can only mean further deterioration of their groundwater basins and greater risk to the community.

The Metropolitan Water District again supports the position of Governor Babbitt for funding for the Central Arizona Project. Adequate funds must be made available to keep the Project on schedule. The willingness of the Arizonans to develop local funding mechanisms to supplement federal appropriations is an important sign of their recognition of budgetary problems and we hope your committee can approve Arizona's request.

LETTER FROM RICHARD W. CLARK, CHAIRMAN, SCOTTSDALE LEGISLATIVE AFFAIRS COMMITTEE, SCOTTSDALE (AZ) CHAMBER OF COMMERCE

March 21, 1985

The Honorable Bruce E. Babbitt
Governor of Arizona
1700 West Washington
Phoenix, Arizona 85007

Dear Governor Babbitt:

In a few days the U.S. Senate and the House Appropriations committees will be hearing testimony in support of Central Arizona Project appropriations for fiscal 1986.

Knowing and appreciating your longstanding support for this project, the Scottsdale Chamber of Commerce would like to take this opportunity to review just how critical the CAP is to securing the water future of Scottsdale.

Of the 1.2 million acre feet (af) of Colorado River water which will be delivered to Central Arizona in an average year, Scottsdale is committed to taking 20,000 af. A number of private water companies in the Northeast area also will receive CAP allocations.

Scottsdale's need for a dependable, clean water supply is obvious. Not only is the community expanding its standing as a major resort destination, it is seeking and attracting more and more clean industry and service-related businesses who recognize the city's quality environment.

Although the CAP cannot and should not be depended upon to fulfill all the future water needs of Scottsdale, it is a critical element in a comprehensive water management plan envisioned by community and civic leaders.

Water conservation programs, the use of reclaimed waste water on greenbelt areas, the acquisition of the Planet Ranch for its water rights and groundwater recharge are among the other options Scottsdale is studying or has implemented to promote wise water use.

In the coming months, Scottsdale will be ready to play a role in the partnership that will commit local funding to Plan 6, the flood control and water storage plan necessary to maximize the benefits of the CAP. In the meantime, Scottsdale recognizes it is imperative that federal funding of the CAP continue at a level adequate to keep construction of the main aqueduct and pumping system on schedule.

We understand the Administration's budget currently contains $173.5 million for CAP, but that the U. S. Bureau of Reclamation could use significantly more, if it is available.

On behalf of the Scottsdale Chamber, the Legislative Affairs Committee wants you to know that we support your vigorous efforts to obtain the most generous CAP appropriation possible.

Thank you, again, for your continued support and for your full consideration of these views.

Sincerely,

Richard W. Clark, Chairman
Scottsdale Legislative Affairs
Committee

LETTER FROM TERRY GODDARD, PRESIDENT, ARIZONA MUNICIPAL WATER USERS ASSOCIATION

March 21, 1985

RECEIVED
MAR 22 19[illegible]

The Honorable Bruce Babbitt
Governor of Arizona
1700 West Washington, 9th Floor
Phoenix, Arizona 85007

Dear Governor Babbitt:

The Arizona Municipal Water Users Association representing the Cities of Chandler, Glendale, Mesa, Phoenix, Scottsdale and Tempe supports your proposed testimony on CAP funding as that testimony was reviewed and amended on March 19, 1985. It is our understanding that this testimony will be presented to both the U.S. House and Senate hearings on CAP funding on March 28, 1985.

If we can be of further assistance on this vital matter, please do not hesitate to call.

Sincerely,

Mayor Terry Goddard, Phoenix
President, AMWUA

Letter From Dale Pontius, President, Southern Arizona Water Resources Association

March 22, 1985

Senator Mark Hatfield
Chairman of Senate Appropriations Committee
U.S. Senate
Washington, D.C. 20515

Dear Senator Hatfield:

Southern Arizona Water Resources Association, SAWARA, would like to add its support of the testimony made by Governor Bruce Babbitt at the Energy and Water Development Subcommittee on Appropriations March 28, 1985.

The funds needed to continue construction on the Central Arizona Project are of great concern to us in southern Arizona because of our dependency on groundwater, but the benefits to the entire state are significant as well.

The support of your subcommittee in this process would be most appreciated.

Very truly yours,

Dale Pontius

Dale Pontius
President

LETTER FROM MARYBETH CARLILE, EXECUTIVE DIRECTOR, SOUTHERN ARIZONA WATER RESOURCES ASSOCIATION

March 22, 1985

Bruce Babbitt, Governor
Office of the Governor
State House
Phoenix, AZ 85007

Dear Governor Babbitt:

Southern Arizona Water Resources Association is pleased to support your testimony to be made to the subcommittees of the House and Senate in Washington, D.C., March 28, 1985.

SAWARA was especially pleased to be included in the drafting and support and concur with the ideas expressed, the details eleborated and the general tone in the testimony.

Please add our name to the list of supporting organizations to your remarks at those hearings.

Sincerely,

Marybeth Carlile

Marybeth Carlile
Executive Director

PROGRESS ON CAP

Governor BABBIT. Senator, very briefly, I believe all of us here have cause to celebrate the progress of this project. As you mentioned in your opening remarks, this will be an historic year with water actually being pumped and delivered through the aqueduct to the Phoenix area. The Salt-Gila Aqueduct, the next step, is now nearing completion. It is completely under construction and the focus of this project now reaches to your hometown of Tucson, with a target date of 1991.

The work in Arizona continues to go very well. The contracting for the receipt of the water, both on the agricultural and municipal and industrial side continues; it is very satisfactory. The local commitments for distribution systems for the water treatment plants in the Phoenix area are right on schedule.

If we have anything to say, in summary, it would be that back in Arizona, this water is more necessary than ever. The demand on both the municipal and agricultural side is higher than might have been anticipated in earlier years. The CAP water is, therefore, more urgently needed than ever.

The comprehensive water management plan of the State is being implemented, particularly the attempts to control the overdrafting of ground water. Those plans are in place. They are being implemented.

They assume that the CAP completion schedules will be met and that, of course, takes me to the real issue of this hearing, which is the funding levels.

FUNDING REQUIREMENT

The deductions that were made last year for Federal funding would be required to keep this project on schedule, particularly the most important and a priority of the aqueduct to Tucson, assumed an appropriation this year in the range of $250 million.

Now, we recognize that times are changing with the Federal deficit putting an extreme pressure on each and every segment of the budget. The administration's request of $173.5 million, in our judgment, is not adequate. It is probably not realistic to stick with the original figure of $250 million, but we would submit, Senator, that if we could get that figure back up to $196 million, which is approximately the expenditure figure of last year, that there would be a realistic hope of keeping this project on time to the target date of 1991 for Tucson.

That would be $20 million above the administration's request. There really are a lot of dominos in place that will fall unless this project reaches timely implementation.

The Southern Arizona Water Rights Settlement Act are applications to the Papagos, Ak-Chin, and all of the other Indian tribes is just one example.

REDUCTION FOR SAVINGS AND SLIPPAGE

I would also urge the committee to consider the problem of underfinancing. In recent years, we have come to this committee and to the Congress to get an appropriation. The Department of the Interior then whittled the appropriation down through what effectively is the impoundment of funds, simply underspending the appropriated figure—last year by about 15 percent.

I don't know what the committee can do to address that issue, but I think it is a very important one in light of the reduced appropriations. I think it would be really very unfair to anticipate a double reduction; that is, a reduced appropriation followed by the withholding of 14 to 15 percent of the appropriated funds at the administrative level.

SAFETY OF DAMS PROJECTS

There are some safety of dams issues this year that I think you will recall your role in the safety of dams legislation which passed last year. The administration has $600,000 in its safety of dams request to begin work at Stewart Mountain Dam.

There is a real problem at Stewart Mountain Dam, and I think it would be imprudent not to recognize that problem and to really deal with it. You may recall that back in the early 1980's, during one of the flood seasons, we actually issued and began to implement an evacuation order for a large portion of Phoenix, because of the possibility that the truss blocks at Stewart Mountain Dam would fail under the stress with the amount of water that was going through that spillway.

I would invite you to look carefully at that. We believe that rather than $600,000 it would be appropriate to authorize about $3 million to

step up our prudence, the work that ought to be done at Stewart Mountain Dam.

Ground Water Recharge Demonstration Program

There are several other items that I think merit attention. One is the High Plain State Groundwater Demonstration Program. The Bureau has $2.5 million in this budget for that recharge study. It has enormous implications for Arizona. I would ask you to consider that favorably.

In a related area, the Corps of Engineers has a request for completion of the Arizona diversion canal to the Phoenix area. It is in the Corps of Engineers budget and is of obvious importance to all of us in Phoenix.

CAP terminal storage

Now, just a word about two related areas. One is terminal storage in Tucson. I would hope that the appropriations bill would clear up any ambiguity that there might be with respect to the authority of the Bureau of Reclamation to do the necessary feasibility and advance planning and design studies with respect to terminal storage. It may or may not be necessary, but I would invite your attention to that.

Plan VI, Flood Control Program

Lastly, just for the record, a word about the plan VI process in the Phoenix area. I met several months ago with a delegation to see if we can, together in Arizona, produce a local funding and local participation plan to bring back to the delegation in September. That process is going very well.

I do not yet see the exact outlines of that concensus, but I think we are committed to have it, and I believe that we will be back in September with a recommendation to the delegation that can, hopefully, serve as a basis for moving into that phase of this project as we begin to spend out the funds for the Tucson area.

Thank you very much, Senator.

Senator DeConcini. Governor Babbit, thank you.

Mr. Steiner, do you have any testimony you care to give?

Mr. Steiner. No, sir, I don't.

Senator DeConcini. I want to recognize Mr. Steiner, the director of the department of water resources, who has served a long period of time in the State of Arizona and received a conservation award from the Soil Conservation Service yesterday.

I am sorry to see that you are retiring from your position, but I suspect that we will have your counsel and efforts available in the future for this project. We are most indebted to you for the outstanding work you have been giving to the State of Arizona.

Tucson Aqueduct

Governor, let me go over a couple of things that you touched on in your testimony. First, I want to say for the record that having dealt with Assistant Secretary Broadbent and even Secretary Hodel on this is-

sue, there seems to be a very positive attitude toward the Central Arizona Project and for funding above the amount that was submitted in the budget request.

Obviously, they have to follow rules set down by OMB. It is discouraging that OMB sets the water policies for the administration, but quite frankly, it was no different in the previous administration of President Carter.

We are hopeful we can convince this committee that a slight increase for the CAP is necessary. Mr. Broadbent explained to me that he believes with an additional $4 million, which he feels he can find within the current reclamation budget, that the aqueduct to Tucson will not be delayed.

Can you give us your opinion on that? If we added $4 million to the fiscal year 1986 budget request, what would that do to the Tucson Aqueduct, as far as the State of Arizona sees the projected water delivery dates?

Governor BABBIT. Senator, obviously, it would be helpful, and obviously each and every addition means less delay. I would like to ask Mr. Steiner to talk about the implications of that $20 million. I doubt that $4 million is sufficient to keep that aqueduct on the 1991 schedule unless there are some assumptions about enhanced funding beyond fiscal 1986. This money is all—99 percent of it is now going into the aqueduct. I don't think $4 million is enough.

Wes?

Mr. STEINER. It is my understanding, Senator, that the Department of the Interior has indicated the capability to spend an additional $20 million.

Senator DECONCINI. That is correct.

Mr. STEINER. And it breaks down, I believe, something like $4 million to Tucson Aqueduct or $4.5 million, about $8 million, I believe, for distribution systems, and the balance of the $20 million for plan VI. My concern is that if, in fact, this additional $20 million is not made available to the Department of the Interior and the Department has to keep its commitment to start construction of phase B of the Tucson Aqueduct in 1986, that they will scrape for money off of either the distribution systems or of plan VI. I think that would be damaging to the completion of our project.

FUNDING CAPABILITY

Senator DECONCINI. The response to questions we have submitted to the Interior Department states on the record its capability to spend $20.6 million above their budget request—$12.4 million could be spent on the water and power components of the project, and $8.2 million for non-Indian distribution systems.

That is assuming another $4 million someplace, I am told, would be spent on the Tucson Aqueduct. The total capability would be $194.2 million.

With $194.2 million, Governor, which is still less that what was appropriated last year by a couple of million dollars, is it your best judgment and Mr. Steiner's, that the project would be kept on schedule if that were the target?

Governor BABBIT. It is certainly my judgment that all things considered, that would be a victory in that it is consistent with completion of the aqueduct to Tucson by 1991.

There are a lot of moving parts to this project, and we must not only complete the aqueduct, but we must have all the other pieces of the project, the pumping stations, a start on the regulatory storage, all of that concept, moving along simultaneously.

But I believe it is safe for me to enter a decision for Tucson and say that if we can find another $20 million, we will all be on hand to cut the ribbon in 1991.

Senator DECONCINI. Governor, the CAP authorization, I am advised, does provide for the Bureau to conduct feasibility investigations on terminal storage in the Tucson area. We will certainly ask this committee to consider report language to intiate these investigations. I appreciate your calling that to our attention.

Let me also say that the safety of dams question and the failure of this administration to budget for these any substantial moneys for these projects in fiscal year 1986, I know, is an issue of grave concern to my colleague from Idaho and myself. This committee is going to have to struggle with that problem in light of the budgetary constraints.

Let me again thank you, Governor, for the outstanding leadership, and those in the audience here from Arizona who took the time to come here. I think it is important for the record to show the total unanimity within the Arizona delegation and the water community of support for this project. We are not a divided State; we have our act together.

My last question, Mr. Steiner, is what is the time schedule for the completion of the distribution systems? In your judgment, are they going to be able to accept the water that will be delivered later this year in the Phoenix area, and if not, when will they be able to take that water?

Mr. STEINER. Senator, we will have some of the distribution system able to take to receive water later this year. Others will be in a position to take water next year.

We believe that if, and especially if this extra money that we are asking for becomes available, we can keep the distribution systems on the schedule to take the water as soon as it becomes available.

Senator DECONCINI. Thank you very much.

I understand former Congressman John Rhodes is here.

John, I am sure my colleague would be more than happy to have you come and sit with us up here. You are someone who has led this battle for Arizona since 1952, I believe, in the House of Representatives. We appreciate you joining us up here, John, for these hearings.

I have no further questions. I yield to my colleague, Senator McClure from Idaho.

TRIBUTE TO CONGRESSMAN JOHN RHODES

Senator MCCLURE. Senator DeConcini, I thank you very much, and I appreciate your gracious invitation to John Rhodes to join us up here. I don't know anyone who has a better right to be up here on this subject

matter. I have served in the Congress for 18 years, the first 6 of that being in the other body, where I worked with John Rhodes. This was not a new topic to the Congress or to the people of Arizona when I first arrived. John educated me very quickly on that, as did the other Members of the Arizona delegation. John is more than welcome here.

REGIONALISM AND WATER RESOURCE DEVELOPMENT

Governor, I came today because I wanted to hear your testimony. I wanted to also be able to make a statement to you and to others from Arizona that are here that as my colleague, Senator DeConcini can attest, there is a growing concern on the part of many of us of a regionalism that, from people outside of the West look at water resource projects and Federal investment as somehow a rape of their taxpayers. We saw that last year, as we were trying to get the Hoover Dam bill through, and the arguments were not partisan arguments. They were regional arguments,. both for and against it, Democrats and Republicans in the West supported that bill. Democrats and Republicans in the East opposed that bill.

I caution you that we have a new and growing problem to deal with in just those terms, and I regret it, because some members cannot understand, coming from an area where rainfall is much more predictable or much more plentiful. Maybe it is still not predictable. We can predict we are not going to have very much in the West, but they can't appreciate either the value or the importance of water projects that are the absolute lifeblood of the dry areas of the West. I know that you understand that. I am sure you have run into that same kind of problem as you deal through the Governors' association.

But the only reason I mention that today is because you have an opportunity in your associations with people who are not from the West to condition them to the fact that we have some demands and some needs that are different from theirs and to plead with them for some understanding of our problems, just as they try to get us to understand their problems, which are different in a regional nature.

Governor BABBITT. Senator, I appreciate that, and I have a brief response and question. From our perspective in Arizona, as we wrestle with reclamation, flood control, hydropower, and all of the related issues, increasingly, it seems to me the regional battle that you describe is going to be fought out over this issue of cost sharing, and I recognize that we are walking a very high and very tight wire on this cost-sharing issue, that it really is a double-bladed sword.

There are many of us in Arizona who are sufficiently desperate to get moving on these projects that we are sympathetic to the demands for cost sharing. I recognize at the same time that it is a divisive issue and that there are other States, including your State of Idaho, which have a different set of considerations. I really say that by way of an observation more than any kind of a conclusion. It seems to me that we are going to have to stay together very, very close on these cost-sharing issues in terms of flood control, reclamation projects, the Corps of Engineers, dam safety, and all of the rest of them and try our very best to

put together a position which will sell West-wide and which will keep us united as we cross this transition toward some kind of new order, whatever it may be.

Senator McCLURE. Governor, I couldn't help but notice, last year, as we were debating the Hoover Dam bill, again, that OMB and the critics of the bill did not raise any question with respect to two aspects of the legislation. One was total Federal investment with no repayment, no cost sharing, so far as tourists, visitor center, or so far as a bridge was concerned that would deal with traffic.

It was only those things which would benefit, peculiarly benefit the people in the area, that they questioned. I don't know whether it is myopia or whether they simply didn't know what was in the bill or whether it was a selective opposition to any kind of assistance in terms of economic betterment or meeting the human needs of the region. But there was that difference, and we didn't really point that out the fourth time because we didn't want them to have any other reasons to oppose it if, indeed, they were simply ignorant of what was in the bill. It is a curious selective vision in which the only features they question are those that pay something back to the Treasury and they don't question those that pay nothing back to the Treasury.

Thank you very much.

Governor BABBIT. Senator, I believe that I speak for everybody in the room in acknowledging the tremendous assistance that you have given us in Arizona with our needs, and I simply say to you we are very, very grateful for your assistance, and we intend to reciprocate and to try to stay together in this small political boat called the inter-mountain west.

Senator McCLURE. Thank you, Governor. It has been a dedication on my part. Your needs are similar to ours in many respects, and if we can't recognize those common needs and assist each other, then there won't be any salvation for either of us.

Senator DECONCINI. Let me just echo, Governor Babbit, your compliments for Senator McClure, for his efforts leading to passage of both the safety of dams and the Hoover power bills. These bills would not have passed without his determination. I am surprised he has any hairs left on his head.

Representative Rhodes, do you care to make any statement?

STATEMENT OF FORMER CONGRESSMAN JOHN RHODES OF ARIZONA

Mr. RHODES. Mr. Chairman, I just want to thank you and my good friend and colleague from Idaho for listening to our testimony today and to assure you that I agree with the testimony of our Governor and Mr. Steiner.

This is a most important project, not only to Arizona, but, I think, to the entire West. The assistance and devotion of this subcommittee and, in fact, the full Appropriations Committee to the needs of developing and maintaining the natural resources of this country are well known and deeply appreciated by all of us who feel the same way.

I think lots of other people, too. I agree with you, particularly, on the sadness of the advent of regionalism. This country has been made great

by the fact that we did understand each other, and we did help each other, and I think we will in the future. But unfortunately, right now, we do have a feeling, as you have so aptly put, in the Congress that, "We can't get ours if we give you yours." That is just not the situation. You have seen studies, and I have, too, concerning the very good treatment which the Federal Government has given the States, not only of the West, but of the East and the Northeast. Also, I am satisfied that our friends in the Northeast would not like to have us do away with or even cut mass transit funding or the funds which go to dredge the harbors along the Atlantic coast.

In other words, it is a two-way street. It always has been, and I hope it always will be.

The eastern part of the United States certainly would not have been well served if the western part of the United States had remained desert and been without the development which has come mainly because of loans. And we should emphasize that, loans which the Federal Government has made to the people of those areas and the money having been very well used.

So thank you very much for hearing us, and we appreciate what you have done, and we look forward with great anticipation to future favors.

Senator DECONCINI. John, thank you. I think the record ought to point out Governor Babbit is heading up a Ground Water Forum, I think, with the National Governors Association; is that correct, Governor?

There is also the National Water Alliance that I have put together with Senators Durenberger, Dole, myself, and several Members of the House. So there is this effort, that the Governor and Senator McClure has indicated we need, to reduce regionalism by recognizing water is a national problem and a national resource and we need to work together as a nation to reduce regional conflicts.

PLAN VI UPDATE

Governor, let me ask one other question that has just come to my mind. If you care to just briefly indicate the process that you are going through with your task force on plan VI and the development of some proposals there. Would you care to give us just a brief update on that process, please?

Governor BABBIT. Senator, the concept is simply to try to recapture this sense of agreement and unanimity which, as you stated earlier, has been the basis of our success in bringing this thing called the Central Arizona Project from dream to reality.

The plan VI, which is the array of water storage, flood control, power generating from dams from New Gila in the west over through the Salt River project, is an authorized feature of the Central Arizona Project. The question is, as we move toward that feature of the project, to what extent will we need to make an offer of either up-front financing or outright cost sharing given any of the components, flood control, power, water conservation, recreation, and all the rest.

The difficulty is to attempt to step forward to the U.S. Congress with

an offer of participation. It has been done in some other western States; the Buffalo Bill Dam in Wyoming is one example. It is my impression that there are States like Idaho where this issue of cost-sharing raises some problems because of a lack of financial capacity of parts of that State and the difficulty is that the kind of offer that we can make that will induce Federal participation, that will warm up some of these easterners to reduce the regional disputes and, at the same time, not leave behind other western States, is simply not as likely a prospect?

Then the question comes of, how do we allocate those costs among the different water users between water and power, between cities and farms, and all of that?

We are in the midst of a very elaborate discussion process involving analysis by the cities, the farms, the power interests, agriculture, and I have admonished the committee at each meeting that not only will we have a concensus by September, but we will have a unanimous concensus at great personal risk to anyone who is not a member of that concensus. [Laughter.]

I would hope, at that point, that we can sit down with the delegation and say: Here is our best judgment of what we can do to induce Federal support that will not create a precedent that is unacceptable to Senator McClure and other westerners that acknowledges we are bridging into a rather different area. We have already seen cost sharing on water distribution systems. We acquiesced to it last year with the leadership of you two with safety of dams. We did some cost sharing through the imposition of surcharges in the Hoover Dam legislation.

The question is, What is next, and how do we get a proper degree of balance? We will be back to the delegation in September and we will present our best judgment and say to you folks: "All right, you are our leaders. You have led us through 70 years of turmoil to success, and you are going to do it again. Look this over, tell us whether you like it, how do you want to change it, and we will be your devoted followers."

Senator McCLURE. Mr. Chairman, Governor, I appreciate your statement, and I think you touched on a matter that does concern me, and I think you know of that concern. There is a kind of a generalized perception in this country that the rich get richer and the poor are left behind. I think there is a great deal of concern, and you express that concern, that we may erect policies that allow the financially competent to benefit from Federal assistance and investment and leave the ones that are less competent to bear the burden totally unserved.

That is a dilemma that I think we all must wrestle with, and I don't wish to interfere with or make it more difficult for those who have the capacity and the willingness to work in a different relationship with the Federal Government so that they can move their projects forward.

I recognize the urgency of the need and the willingness of the people to participate in that way. But we may be in danger of fundamentally changing the rules in such ways that we leave behind some deserving and needful projects that simply don't have the same basis of financial capacity.

I don't know that we have sorted that out yet, but I will certainly listen to you and others of the Governors association, my own Governor and others, and Senator DeConcini, as well as other members of this committee and other Members of the Senate as we struggle with that question of how do we structure a program that can meet the needs of both groups, those who can afford to make some contribution, and those who cannot. Because there are some in both category.

Governor BABBIT. Senator, I would only add that I have never come here to characterize Arizona as a rich State. [Laughter.]

Senator MCCLURE. But we in Idaho always look at you that way. [Laughter.]

Senator DECONCINI. We are rich in sunshine, Senator.

Governor BABBIT. Senator, I think that is a very succinct and inciteful statement of how it is that we have to work with each other to find this balance that does not work to the prejudice of those States which are an indispensable part of this coalition. I appreciate that. I think it was very inciteful.

Senator DECONCINI. Thank you, Senator McClure. Thank you, Governor Babbit; Mr. Steiner.

ADDITIONAL PREPARED STATEMENTS FOR THE RECORD

Before we conclude the hearing, Chairman Hatfield has asked that the prepared statements covering projects in the southwestern part of the country be received at this time. So, without objection, those statements will be made part of the record at this point.

[The statements follow:]

COLORADO WATER PROJECTS

STATEMENT OF THE STATE OF COLORADO

Introduction

This statement is submitted on behalf of the Honorable Richard D. Lamm, Governor of Colorado; Mr. David H. Getches, Executive Director of the Colorado Department of Natural Resources; and the Colorado Water Conservation Board, which is the state agency charged with the protection, conservation, and development of the water resources of the State of Colorado.

Summary of Requests

In addition to the funding included in the President's recommended FY 86 budget for the Bureau of Reclamation and the Corps of Engineers, Colorado respectfully requests:

(1) funding for construction starts on the Narrows and Animas-La Plata projects,

(2) an increase in construction funding for the Parodox Valley and Grand Valley salinity control units to $8.4 million and $5.7 million, respectively, and

(3) a $300,000 appropriation for continuing planning and engineering on the Westerly Creek flood control project in Denver and Aurora.

With respect to the requests included in the President's budget, all of Colorado's on-going projects will receive less funding than was appropriated to them in the current fiscal year. We believe that Colorado has taken its fair share of cuts in these times of fiscal austerity. We would hope that this committee is of the same view.

Bureau of Reclamation (Requested Increases)

We take exception to the President's recommended budget insofar as it does not contain funding for construction starts on the Animas-La Plata and Narrows projects.

The Animas-La Plata project, which was authorized in 1968, is a joint Colorado-New Mexico project designed, among other things, to address many of the water supply problems which confront the Indian reservations in the project area. Other components of the project will serve non-Indian populations in Colorado and New Mexico with municipal water. Finally, project water would significantly strengthen the irrigated agricultural economy of southwestern Colorado.

The Animas-La Plata project holds the potential of assisting in the resolution of the claims of the Ute Mountain Ute and Southern Ute Indian Tribes to the waters of the San Juan River Basin. Those claims have been filed and would have a dramatic impact on water users in Colorado and New Mexico if successfully litigated. However, we believe that all parties understand that expensive and protracted litigation is in no one's interest.

The tribes have been strong supporters of the Animas-La Plata project. We believe that they are aware that storage

reservoirs are the best means by which to meet their water needs. The Animas-La Plata project will provide such storage.

The fulfillment of Indian reserved water rights is a national obligation which should be dealt with by the federal government. The Animas-La Plata project can provide a means to resolve the tribes' claims amicably.

Planning and pre-construction activities for the project have been completed and the project is ready for construction. We again urge your favorable consideration for an appropriation in the amount of $1.35 million to initiate construction.

The Narrows project was reauthorized by Congress in 1970. It will provide supplemental water to some of Colorado's most productive agricultural lands, municipal water to several rural communities, and significant recreational opportunities. Another project purpose will be flood control. Finally, secondary benefits will accrue to downstream water users in Nebraska.

The Narrows Reservoir will be the largest water body in close proximity to the greater Denver metropolitan area. The project will yield numerous recreational benefits to the rapidly growing communities along Colorado's Front Range. For example, boaters now frequently travel over 200 miles to Lake McConaughy in Nebraska, while facilities in the metropolitan area are being used to their capacity. The Narrows project will substantially expand the area's water-based recreational resource to the benefit of well over a million people.

The project was in a construction status in 1977 when it was halted by the Carter Administration. At that time, activity on the project was suspended even though property acquisition and final engineering and design work were underway. In the past two fiscal years, the Bureau updated and completed the planning for the project.

The President's recommended budget for FY 86 includes $500,000, primarily to be used to resolve the section 7 consultation process under the Endangered Species Act. In all other respects the project is ready to go to construction. In anticipation of the resolution of the endangered species issues, we respectfully ask that the Congress appropriate additional funding for the initiation of construction.

As you well know, it has been some time since appropriations were made for a construction start on a water resources project. In recent years, there has been much debate about potential new requirements for non-federal, "up-front" financial participation in federal water projects, even though previously authorized by Congress without such requirements. We are anxious to work with Congress and the Administration in considering this matter in order to reach a solution to the issue of project funding.

We wish to draw to your attention the readiness of Colorado to consider reasonable requirements for non-federal financing. The Colorado General Assembly has authorized the Colorado Water Resources and Power Development Authority, which is a political subdivision of the state, to consider financial participation in the Narrows and Animas-La Plata projects. We only await Congressional direction as to whether and how to proceed.

We also want Congress to be aware of the fact that Colorado has four other authorized projects--Fruitland Mesa, San Miguel, Savery-Pot Hook, and West Divide. We firmly believe that commitments have been made by Congress, the seven Colorado River

Basin states, and federal hydropower customers to use revenues from the Colorado River Storage Project (CRSP) hydropower system to achieve a certain level of development in Colorado and in the other three Upper Division states. We believe that the agreement of these parties is embodied in the 1956 CRSP Act, in the 1968 Colorado River Basin Project Act, and in the acts amendatory thereto which have authorized participating projects of the Colorado River Storage Project.

If these authorized projects are not going to be funded with Congressional appropriations, despite the fact that repayment would be made from CRSP power revenues, then CRSP power revenues should, in Colorado's opinion, be made available in a manner which will enable the Upper Division states to themselves finance the construction of water projects which will achieve a level of development equivalent to that represented by their authorized, but as yet unconstructed, CRSP participating projects. To this end, Colorado is exploring legislation which would make CRSP power revenues payable directly to the Upper Division states. Such funds would then be used by those states to finance water project construction in order that the level of development agreed to by Congress, the seven Colorado River Basin states, and the purchasers of CRSP power can be achieved.

Colorado advanced its proposal last year. Discussions have been held with various interested parties and are on-going at this time. This is a matter of the highest priority for Colorado and we fully intend to pursue it to conclusion.

Bureau of Reclamation (Water Projects in the President's Budget)

For those items already included in the President's recommended budget, we urge that Congress maintain the funding levels requested. In particular, we support the requested funding for continuation of projects under construction.

We would caution that all of Colorado's on-going projects will, under the President's recommended budget, receive less funding than has been appropriated to them in the current fiscal year. This will delay the completion of several projects. Further cuts would be unduly harsh.

We believe that Colorado has taken its fair share of cuts in the President's budget. Other projects throughout the reclamation west must bear their proportionate burden in these times of fiscal austerity. We would strongly resist any effort to increase funding for other Bureau projects at the expense of Colorado's on-going projects. We would hope that this committee would be of the same view.

Bureau of Reclamation (Colorado River Water Quality Improvement Program)

The seven states of the Colorado River Basin have endorsed a coordinated, basinwide approach to the reduction of salinity in the Colorado River. The salinity control units being studied, planned, and constructed by the Bureau of Reclamation are an integral component of the overall salinity control program. We would call your attention to the detailed statement being submitted on behalf of the seven basin states, acting through the Colorado River Basin Salinity Control Forum, in which statement Colorado concurs.

Colorado and the Forum take exception to the President's recommended budget insofar as funding for the Paradox Valley and Grand Valley salinity control units is concerned, both of which are located in Colorado. The sums requested are simply inadequate to maintain an efficient construction schedule. We respectively request that funding be increased to $8.4 million for the Paradox Valley unit and to $5.7 million for the Grand Valley unit.

Corps of Engineers

The sums contained in the President's recommended budget are, with the exception noted below, adequate for the timely execution and continuation of federal flood control programs in Colorado. We would caution, however, that any reduction in these budget requests would unnecessarily jeopardize the lives and properties of many thousands of Coloradans.

Especially important is the President's request for construction money for the South Platte River project below Chatfield Lake and for the Fountain Creek project. Located in the heart of the Denver and Pueblo metropolitan areas, respectively, these are critical flood control projects. It is important that construction on the South Platte River project be maintained on schedule and that construction on the Fountain Creek project finally be initiated.

We take exception to the failure of the President's recommended budget to include funding for the Westerly Creek flood control project in Denver and Aurora. The sum of $300,000 is needed in FY 86 for continuing planning and engineering. This project is vitally needed to enable local governments in the area to proceed on their own to solve problems upstream from the proposed federal project, which would be located on Lowry Air Force Base. The upstream problems cannot be addressed until the federal project goes forward.

NARROWS PROJECTS, COLORADO

STATEMENT OF THE LOWER SOUTH PLATTE WATER CONSERVANCY DISTRICT

The Lower South Platte Water Conservancy District formed under the Colorado Statutes in 1964, to provide a local sponsoring and contracting entity for the Narrows Unit, Colorado, under the Reclamation program, submits the following testimony to demonstrate its continued support for construction of the Narrows Unit Colorado, of the Missouri River Basin Project, as authorized on August 28, 1970, by a act of Congress, (Public Law 91-389).

Today we sincerely request this committee include an appropriation of $500,000 for construction activities on the Narrows Unit. It is anticipated that these funds will be utilized for the purposes of right-of-way acquisition, for construction designs for railroad, highway and other activities as listed in the President's Budget recommendation.

The Narrows Reservoir remains an important component of water management programs on the South Platte River. Narrows is a key to management of the water to meet irrigation, municipal and industrial needs of Colorado; and assist water users in Nebraska to manage their supplies. There is no storage on the South Platte River between Denver, Colorado, and the Gulf of Mexico. Water users in Colorado and Nebraska do not have a storage tool to manage their water resources, or to provide protection from life threatening floods.

As stated, we support the President's recommended request appropriation for Narrows of $500,000 although $5,000,000 could be utilized by the Bureau of rights of acquisition and other construction activities in FY-1986.

The two sponsoring districts signed contracts with the United States for project water on July 27, 1976. This district has begun the process of contracting with our local water users entities. To date the response has been very favorable. Completion of this process is projected for midsummer. Upon completion the district will have fulfilled the prerequisite activities.

The statement of capability by the Bureau of Reclamation included a reference to local cost-sharing. The State of Colorado and the local sponsoring agencies are willing to consider upfront cost-sharing, should that in fact become a requirement, expressed

by Congress. The Narrows project has been authorized twice by the United States Congress. Neither of those authorizations indicate any desire by the Untied States to have non-federal entities provide upfront cost-sharing, in addition to providing the water right and reguirements as per Fish and Wildlife and Recreational facility features. The Narrows is a participating unit of the Pirck-Sloan Missouri River Basin Project; therefore, the U.S. Treasury will be fully reimbursed for the project's costs allocated to irrigation water supply both through local payments and power reveneus.

In January 1985, the two districts successfully proved our claim of due diligence on the water right for the Narrows Dam and Reservoir. Water law in the State of Colorado requires holders of conditional decrees to submit evidence of diligent pursuit to complete the proposed project. These claims must be submitted on a quadrennial basis. It is estimated that the two sponsoring districts expended nearly $30,000 in that effort which included a week long trial. The cost of these court activities is not included in accounts of local project cost participation.

One of the contributing factors to this successful action was the work accomplished by the Bureau of Reclamation pursuant to the congressional directives to reprogram funds appropriated and to update studies in anticipation of construction funding. Since January 1982, the Bureau has been accively engaged in updating the project environmental studies and making revisions to enhance the project's utility. The "Final Supplement to the Final Environmental Statement" has been filed with Environmental Protection Agency this past month. We encourage the committee to review that document as a part of the decision process leading to appropriation of funds for Narrows for FY-1986. Other documents have been completed as well. The Narrows Project Data Sheet, Department of the Interior, dated January 31, 1985, states the direct benefit to cost ratio to be 1.6 to 1.0.

The District is supportive of the cooperative task force formed by the Bureau, which includes representation of the states of Wyoming, Nebraska, and Colorado, to develop viable measures to preclude jeopardy to the habitat area in Central Nebraksa. The Narrows project enjoys the support of the Nebraska State Unicameral, and many of the major water organizations in Nebraska. We also are proud to say that construction of Narrows is supported by the Water Resources Congress, headquarterd in Arlington, Virginia, Mr. Gary LaGrange of Franklin, Louisianna,

President, and in addition, it is requested that the committee review a statement from Water for Colorado, a Citizens Committee, Inc.

In conclusion, we sincerely request your favorable consideration of an appropriation of $500,000 to resume construction of the Narrows project. The Lower South Platte District is doing everything in its power to live up to the requirements of Reclamation as set forth by the Congress. We have a repayment contract with the United States and it is our belief that Narrows construction should proceed according to the standing law and rules. Once again, we note that in 1982, Colorado State Legislature through SJR-6 authorized the Colorado Water Resources and Power Development Authority to consider cost-sharing proposals to move Narrows toward completion. Should the Congress deem that additional non-federal funding be appropriate Colorado is ready to participate.

Thank you for allowing us the opportunity to appear before you today.

STATEMENT OF THE CENTRAL COLORADO WATER CONSERVANCY DISTRICT

It is a great privilege for the Central Colorado Water Conservancy District to submit this written statement in support of the Narrows Unit of the Pick - Sloan Missouri Basin Program, South Platte Division, Colorado.

The Narrows Project remains an essential factor in meeting the water needs of the South Platte River Basin. Our request of this committee for fiscal year 1986 is an appropriation of $500,000.00. The purpose of these funds would be to reinitiate activities concerning the project.

We submit today that the project is needed much more now than it ever has been. In submitting this statement, we respectfully implore each committee member to consider the regional differences between the needs of semi-arid Colorado and other areas of our country.

The Narrows Project becomes more important to our area daily because the needs of the region are changing so quickly. Narrows is now a project for all the people of the eastern slope; farmer and city dweller alike.

How can the Narrows improve regional agriculture? Besides the many and varied benefits of a large multi-use project, Narrows can contribute greatly to existing agriculture. But, according to the study Agricultural Land Conversion in Colorado, published by the Colorado Department of Agriculture, "Renewable irrigated acreage served by renewable water supplies is no higher now than it was in 1959." And, "Two-thirds of the value of all Colorado crops is based upon irrigation." The Narrows project would provide 'security through storage' to existing producers while opening new lands to production.

Also mentioned in the study, "Eighteen percent of Colorado's current irrigated acreage (503,000 acres) depends upon nonrenewable ground water. Most of this acreage (406,000 acres) is located in the Eastern High Plains above the Ogallala Aquifer." It should come as no surprise that falling water tables are endangering the production of this area.

We submit that recharge of the Ogallala or surface water deliveries is possible with South Platte River water, but impossible without large scale storage (Narrows).

How can Narrows aid in orderly population growth? Our current population of 2.7 million is growing at an annual rate of 2.75 percent -- nearly three times the national rate. According to a recent study by the Department of Housing and Urban Development, "Front range population is expected to increase by one million residents by the year 2000. This growth will require an additional 200,000 housing units between 1985 and the year 2000."

Clearly, these new residents will need water. Rather than the present practice of cities acquiring senior agricultural water rights for human

consumption, new and dynamic practices of sharing our water resources will come forth, if there is storage!

The Narrows Project, over time, will develop a tremendous volume of water which can be shared by urban and rural water users, through orderly and accepted exchange procedures.

Today, we ask for the help of the Federal Government to fund this incredibly important project.

Local financial support is a part of the Narrows Project financing. State front-end money has been offered to the Reagan Administration. The taxpayers of the area have been financially supporting this project through their taxes. They have demonstrated further support through the willingness to contract with the United States for repayment of the project's costs as prescribed in the acts of this Congress. The District also has a contract to pay the United States Treasury $91,000.00 per year for our apportioned share.

Greater payments will be made to the United States as the values of the agricultural commodities change. The water service contract also meets the administration's objectives in the area of repayment. The repayment escalator clause assures that th United States will receive a fair payment on their wise investment.

Colorado strongly supports the Narrows Project. The Narrows again became the number one priority for construction of the Colorado Water Conservation Board. The Governor and the State Legislature have recognized the increasing importance of the development of the water resources in meeting the demands placed on Colorado by the energy crises, food production, foreign exchange of agricultural commodities, and others, such as gasohol proposals. To meet these demands, the Colorado State Legislature has established a fund to meet the financial requirements for the development of Colorado's water resources. Monies are available from this fund to meet the State's share of the construction costs for future federal projects and other purposes.

Over the past years, we have enjoyed the opportunities to present to this committee myriads of facts and information outlining the need for the Narrows. Now, new efforts designed to develop and receive mutually beneficial use from Colorado resources enter into the picture. For example, a program designed to take agricultural water, place it in municipal use, then treat that water and return it to agricultural systems, is facing public opposition. You may ask why such a farsighted program would be opposed. We submit that the lack of storage facility such as the Narrows makes this type of program almost impossible. Agricultural water users must be assured of storage facilities.

At this point we raise the question of the contract as it represents the honor and word of the United States Government. As earlier mentioned, this sponsoring District executed a repayment contract with the Secretary of the Interior, on July 27, 1976. Since the initiation of the most recent activities on the Narrows in 1958, the people of the South Platte Valley have held this engagement with the Department of Interior to be one of honor and good faith. The contract represents the good faith of the United States to pursue the completion of the Narrows Unit. Throughout the intervening twenty-six years, we have complied with the laws of this honorable Congress and every mandate of successive Presidents from John F. Kennedy. We have consented to demands for changes by federal agencies. Many of these did not benefit the water user but increased the project cost for water users. The people have spent years of time, hundreds of thousands of dollars, and have made the contractual commitments. We submit that the actions of the current administration suggests that this contract, the word of the United States, is meaningless.

Our appeal to this committee for funding includes an appeal that the contract and the word of the United States be restored to an elevation of honor and meaningfulness.

Energy is the most critical issue in this country today. Denver, Colorado is being looked upon as the energy capital of the country. The

United States must take progressive and immediate action to eliminate our dependency upon foreign energy. This means development of coal and oil shale for which Denver will be the hub. The increase in population is going to have a major impact on the "normal" or "base" water supply of our area. Again, this places further importance on the ability to captur the more unusual flows of large volume.

In summary, we appeal to Congress to:

a) Appropriate $500,000.00 for the reinitiation of construction activities on the Narrows Project for FY-1986.

The attention of the members of this committee is greatly appreciated.

Thank you.

STATEMENT OF WATER FOR COLORADO

Mr. Chairman, members of the Subcommittee:

Water for Colorado is a statewide nonprofit citizen's organization campaigning for the wise use and adequate supply of water for Colorado. Our membership actively endorses the 1986 President's budgetary recommendations for water development through the Bureau of Reclamation and the Army Corps of Engineers in Colorado.

There are however, two areas that need additional attention if Colorado is to continue it's rational development and the United States is to honor its commitments established through compacts governing the major rivers with headwaters in our State.

First, Water for Colorado calls your attention to the Narrows Unit (Colorado) of the Pick Sloan Missouri Basin Program. The Narrows project is vital to Colorado and the lower states because of the recreation, flood control and irrigation benefits which flow from the proposed investment. It is time to take the Narrows project off hold and get it built. The organization supports expanding the scope of activities outlined in the President's budget proposal of $500,000 in 1986.

We support the proposed level of funding for Narrows but want these dollars to focus on the resumption of acquisition of rights-of-way, engineering design work for railroad, highway and other utility relocations. We also support the continuance of the coordinated activities between the U.S. Fish and Wildlife Service, the Bureau of Reclamation and the cooperative efforts of the affected states to resolve issues pertaining to endangered species and the jeopardy opinion.

Second, Water for Colorado supports funding for the projects integral to the fulfillment of the Colorado River Basin Act of 1968. We refer to the Animas-LaPlata, Fruitland Mesa and Savery-Pot Hook projects. These projects have served as the whipping post for the nations' economic ills. It is time to stop looking at false economies and recognize that investments in these Colorado river basin projects will prove to be of long term value to all the Western United States. To postpone these investments which will pay for themselves simply puts off the inevitable decisions which face Congress. Postponing the decision will only increase the cost of the investments. The sound economic and public policy decision to make is to start construction of these projects in fiscal year 1986.

Let us learn from our recent experiences. During the energy crisis the Nation looked to Colorado as the safety valve to protect our economic independence. Had the energy crisis persisted the Nation would have quickly learned that there was an inadequate water supply to support the efforts to develop these energy resources. The nation has a respite from the energy crisis but not from the reality that energy alternatives provided by Colorado must be readily available to assure a healthy future. The development of Colorado's water projects is critical to preparing for this nation's future.

Today, our Country is confronted with an agricultural crisis that may cause some decision makers to argue for the postponement of agricultural related water investments. Water for Colorado believes that this is a myopic view that will lead to the long term imbalance of state and regional economies. The future demand for quality water will place agriculture in a tremendously difficult position unless the water needs for this industry are secured today. The cost of inaction will be borne by the shoppers of tomorrow, a cost that could be avoided with foresight through wise investments in the water projects we have discussed.

Finally, Water for Colorado believes that the burden for financing the total amount of these projects should not fall on the Federal government. Our organization will work with the State of Colorado to encourage an equitable sharing of costs with the Federal government on the major projects which have been authorized by Congress but remain unfunded.

Thank you for your positive action on these matters.

ANIMAS-LA PLATA AND DOLORES PROJECTS, COLORADO

WITNESS LIST

PROJECTS INVOLVED:
Dolores Water Reclamation Project
Animas-La Plata Water Reclamation Project

PROJECT SPONSORS:
Southwestern Water Conservation District of Colorado
Animas-La Plata Water Conservancy District
Dolores Water Conservancy District
La Plata Water Conservancy District
Southern Ute Indian Tribe
Ute Mountain Ute Indian Tribe
San Juan County, New Mexico
La Plata County, Colorado
City of Farmington, New Mexico

REPRESENTATIVES IN PERSON OR BY STATEMENT:
Frederick V. Kroeger, President, Southwestern Water Conservation District of Colorado,
Director, Animas-La Plata Water Conservancy District
Frank E. (Sam) Maynes, Attorney for Southwestern Water Conservation District of Colorado
Attorney for Southern Ute Indian Tribe, Ignacio, Colorado
Chris A. Baker, Chairman, Southern Ute Indian Tribe, Ignacio, Colorado
Vida Peabody, Southern Ute Indian Tribal Council Member
Ernest House, Chairman, Ute Mountain Ute Indian Tribe, Towaoc, CO.
Judy M. Knight, Vice Chairman, Ute Mountain Ute Indian Tribe
John E. Murphy, President, Animas-La Plata Board of Directors
Former Mayor, City of Durango, Colorado
John Porter, Manager, Dolores Water Conservancy District
W. T. Butler, Director, Dolores Water Conservancy District Board
Brice Lee, Manager, South Durango Water Conservancy District
Director, Animas-La Plata Water Conservancy District
Art Isgar, Director, Animas-La Plata Water Conservancy District,
Director, La Plata Water Conservancy District
Allen J. Murdock, Director, Animas-La Plata Water Conservancy District
Board of Directors
F.F. "Chano" Montoya, Chairman, La Plata, New Mexico Water Conservancy District
Ann W. Brown, Member of Durango, Colorado, City Council
Doris Brennan, La Plata County, Colorado, Commissioner
Dee J. Montano, Mayor, City of Farmington, New Mexico
Harold A. Ranquist, Attorney for City of Farmington, New Mexico
Manuel Hastings, City Councilman, City of Farmington, New Mexico
Honorable Ray Kogovsek, Former Colorado Representative, U.S. House of Representatives

SUMMARY PAGE

PROJECT	REQUEST
Dolores Project (FY86)	$35,000,000 Construction Funds
Animas-La Plata Project (FY86)	$ 1,250,000 Construction Funds
" " " (FY87)	$ 3,900,000 Construction Funds

Statement of Ray Krogovsek, Former U.S. Congressman

Mr. Chairman and Members of the Committee:

I am Ray Kogovsek, a resident of Pueblo, Colorado, and a concerned citizen of the Third U. S. Congressional District - concerned over the continued postponement of a vitally needed water storage and irrigation project previously authorized for southwestern Colorado. I am aware of the multitude of claims on the national budget as the Congress prepares for the forthcoming fiscal year. Requests come from many parts of the country for special consideration of justifiable expenditures for particular needs. Yours is indeed a challenging task, for you are expected to sort out the assertions of needs, plan for the apportionment of limited funds, and ultimately make many recommendations and decisions that will not fully satisfy certain constituents.

In this time of careful scrutiny of all proposed expenditures, I ask that you examine the merits of a truly deserving Federal undertaking, the construction of the congressionally authorized and too-long delayed Animas-La Plata Project. Any review of its history will reinforce the conclusion that the need for it is a compelling one, that its costs are outweighed by its benefits, that it poses a reasonable solution to the mounting problem of Indian water rights in southwestern Colorado and New Mexico, and that its existence will prevent the recurring disasters to crops caused by sporadic rainfall in an arid region.

If the State of Arizona, through the funds appropriated pursuant to the Ak-Chin Community Act of 1978 and through the funds authorized under the Southern Arizona Water Rights Settlement Act of 1982, was able to demonstrate the wisdom of negotiated settlement of water rights controversies involving Indian tribes and non-Indian communities, we should not reject the opportunity when analogous circumstances obtain in Colorado, where the Southern Ute Indian Tribe and the Ute Mountain Ute Indian Tribe await the decision of this Committee, the action of the Congress, and the ultimate approval or disapproval of the Administration before proceeding with litigation to establish firmly and finally their quantified reserved water rights.

This Committee now is the key player in the drama. The United States Congress, in passing the Colorado River Basin Act of September 30, 1968, set the legislative stage for you to act, to clear the way for approval of the appropriation needed for Project construction. In fact, the Congress has already invested nearly $4,000,000 in the Animas-La Plata Project for evaluative studies and preliminary planning. It is clear that Congress has in the past imprinted the Project with its stamp of approval. Your affirmation of the actions of earlier legislators will find its most eloquent expression in an unequivocal endorsement of immediate funding for construction of the Animas-La Plata Project.

Thank you for your consideration and concern.

The Honorable Ray Kogovsek
Former Congressman
U. S. House of Representatives

STATEMENT OF FRED V. KROEGER, PRESIDENT, BOARD OF DIRECTORS, SOUTHWESTERN WATER CONSERVATION DISTRICT OF COLORADO

Mr. Chairman and Members of the Committee:

I am Fred Kroeger, President of the Board of Directors of the Southwestern Water Conservation District, a former (twenty-year) member of the Colorado Water Conservation Board, and a long-time member of the business community of Durango, Colorado. As a lifelong resident of La Plata County, Colorado, I have come to Washington today, as the record will show I have come for several years in succession, to make a further appeal to this Committee for funds for the Animas-La Plata Project. I am here as one of the many residents of our region who rely on you for help in obtaining $1,250,000 for initial construction in Fiscal Year 1986, and $3,900,000 in the Fiscal Year 1987 budget for second-year construction.

What we seek is no more than the fulfillment of the intent of the Congress, as reflected in Public Law 90-537, the Colorado River Basin Act of September 30, 1968, which authorized the Animas-La Plata Project. That Act of nearly seventeen years ago, was the outgrowth of the Colorado River Storage Act of April 11, 1956 (P.L. 84-485), which preceded the 1968 enactment by more than a decade. Through those legislative enactments, Congress intended to establish a system of reservoirs for storing and allocating in an equitable manner the waters of the Colorado River and its tributaries between the states of the Upper Basin (Colorado, Wyoming, most of Utah, and parts of Arizona and New Mexico) and those of the Lower Basin (California, Nevada, most of Arizona, and parts of New Mexico and Utah), pursuant to the Colorado River Compact of 1922.

There is, even more so than previously, a degree of urgency that attends our request this year. In addition to scarcity attributable to seasonal fluctuations and the potential demands of the Central Arizona Project, we are confronted by the far more serious situation of losing water rights we already have to local Indian tribes, based on the Winters Doctrine of reserved rights, first recognized by the United States Supreme Court in Winters v. United States, 207 U.S. 564 (1908). Thriving communities like Durango, Colorado, and Farmington, New Mexico, which rely on the waters from the Animas and La Plata River drainages to satisfy their municipal needs, as well as to provide for their future development, face the uninviting prospect of protracted litigation with the Southern Ute Indian Tribe and the Ute Mountain Ute Indian Tribe, and with the United States as trustee of the Tribes, for quantification of their water claims. Yet our understanding with the Tribal Councils of both Tribes is that they would prefer to avoid the cost of litigation by agreeing to have a reasonable determination of their water entitlement reflected in federal legislation, specifically, through congressional funding of the Animas-La Plata Project.

It is not idle conjecture to bring up at this time the threat of litigation over the water rights on the part of the Indian tribes of southwestern Colorado. The first assertion of these claims by the United States was made in the Federal District Court for the District of Colorado in November of 1972, following which the United States was joined in Colorado state court water rights proceedings in Colorado Water Division 7. In December 1976, the United States agreed with other parties to postpone trial indefinitely pending a decision by the Colorado Supreme Court in cases pertaining to federal reserved rights claims in three other Colorado water divisions. The consolidated proceedings involving these three other water divisions were finally decided in November of 1982. The decision in this case (United States v. City and County of Denver, 656 P.2d 1 (1982)), in which the Colorado Supreme Court recognized federal reserved water

rights premised on the Winters Doctrine, removes the cause for continued postponement of tribal water claims adjudication. How long can the Southern Ute Tribe and the Ute Mountain Ute Tribe be dissuaded from pursuing a litigative remedy in the face of repeated rejection of their overtures to resolve the issue through the Animas-La Plata Project? Despite the extended litigation that might be necessary, as well as the substantial expense to the United States and to the state of Colorado, they have every reason for approaching the limits of patience in this matter. The almost certain outcome of litigation would be substantial diminution of the rights of non-Indians to waters of several rivers of southwestern Colorado and their tributary streams near the Indian reservations.

In actuality, the Federal Government at this time must make, on behalf of the taxpayers, a selection of one of the following very basic options: (1) pay now, or (2) pay later. Most analyses of the Animas-La Plata Project have failed to take properly into account the cost of litigating Indian water rights. There is a recent study entitled The Animas La Plata Irrigation Project: A Re-Examination of Regional Benefits and Costs, by Dr. Bernard Anderson, Professor of Economics at Fort Lewis College, which does focus attention on this aspect of the cost of the Animas-La Plata Project, however. For example, he takes into account the engineering studies, including soil and hydrographic analyses, that must be completed for the approximately 350,000 acres comprising the Southern Ute Indian Reservation and the more than 400,000 acres of the Ute Mountain Ute Indian Reservation in order to calculate the number of practically irrigable acres on each. Dr. Anderson noted that such expenditures on the reservation of the Pyramid Lake Paiute Tribe in Nevada led to the approximately $2,500,000 spent on litigation of that Tribe's water rights. Trial costs for the litigation of water rights involving the Wind River Indian Reservation in Wyoming have already exceeded $12,000,000, and the end is not in sight. Anticipating the costs of contesting the water entitlement claims of the two Colorado tribes, the State of Colorado has provided for $5,000,000 as an initial expenditure, should the case go to trial. Dr. Anderson says in his analysis, "A reasonable estimate of the total cost of the contemplated litigation exceeds $15,000,000." He also referred to a possible loss of $38,760,000 in land values that could occur as a result of loss of irrigation water following recognition of Indian claims, besides considerable losses in tax revenues and in incomes from farm and commercial activities. Overall, Dr. Anderson estimates the cost of failure to solve Indian water claims through construction of the Animas-La Plata Project could well amount to $60,881,000. Thus the "pay now or pay later" option takes on significant meaning. This year, we are asking for initial construction, and in Fiscal Year 1987 for second-year construction.

While our immediate concern is directed toward the threat of litigation, the people of our area, ladies and gentlemen, are also genuinely anxious about prospective losses of available water resulting from the approaching completion of the Central Arizona Project. Originally, we were told by Congress that construction of water reclamation projects of the Upper Basin of the Colorado River and those of the Lower Basin would proceed in relatively simultaneous fashion. What we have witnessed, however, is systematic and sustained funding of the Central Arizona Project, in the Lower Basin, and substantial neglect of such vital reclamation projects in the Upper Basin as the Animas-La Plata Project. Our local Bureau of Reclamation office provided me with estimated cost figures for the Central Arizona Project which reflected an expenditure of $1,273,444,968 through the end of Fiscal Year 1984 and a budget of $167,830,000 for Fiscal Year 1985. Moreover, the President's proposed budget for Fiscal Year 1986 contains provision for $173,500,000 for the Central Arizona Project, despite the mounting national debt and broadly lamented budget deficit. Since 1968, the Animas-La Plata Project, on the other hand, has received only $3,981,534, and this amount was for advance planning only, not for its much-needed construction.

This disparity is extremely difficult for us to explain to those who look to us for answers, for they find it incomprehensible that funds are, year after year, denied to a vitally needed reclamation development like the Animas-La Plata Project, supposedly because of the imperatives of trying to balance the national budget or reduce the national debt, yet year after year monies pour forth uninterruptedly in a surging stream for the ever-rising needs of the Central Arizona Project. Now in 1985, the members of the Subcommittee on Appropriations of the Energy and Water Development Committee are in a position to redress this distressing inequity and to bring into meaningful existence a congressionally mandated project that has been consigned to financial wasteland for much too long.

I ask the Committee to bear in mind also the relationship of the long-term construction cost of the Animas-La Plata Project to the long-term construction costs of the Bureau of Reclamation's projects as a whole. Assuming full funding of the Animas-La Plata Project for the next four years, its construction cost would be less than one-tenth of 1% of the Bureau-wide budget for construction in Fiscal Years 1986 and 1987, only 1.8% in Fiscal Year 1988, and only 6.45% in Fiscal Year 1989. Then in Fiscal Year 1990 it will slip back to 3.56% of the Bureau-wide construction budget.

And so, once again, I appeal to this Committee to recognize the vital role of water storage in sustaining the vitality of southwestern Colorado and the future development of the region. With an average precipitation of less than twenty inches a year, most of which occurs between October and the end of April, and less than seven inches of rainfall during our growing season, we must move forward in the management of this meager but essential resource by capturing the melting runoff from our mountains, storing it in reservoirs for careful allocation and use, and then distributing it in a soundly organized way. The Animas-La Plata Project has long been recognized as the best instrumentality for achieving these objectives.

STATEMENT OF JOHN E. MURPHY, CHAIRMAN, BOARD OF DIRECTORS, ANIMAS-LA PLATA WATER CONSERVANCY DISTRICT

Mr. Chairman and Members of the Committee:

I am John Murphy, Chairman of the Board of Directors of the Animas-La Plata Water Conservancy District, a three-term member of the Durango City Council and former Mayor of Durango. As a life-long resident of the area that is the intended beneficiary of the Animas-La Plata Project, I join with other residents of southwestern Colorado in asking for your assistance in obtaining federal funding for construction of this long-needed Project.

The water conservancy district that I represent was formed in March of 1981. One of its designated functions is that of sharing in the administration of the Animas-La Plata Project once the funds for its construction and operation have been appropriated.

The Project, as planned, will provide 41,700 acre-feet of municipal and industrial water to Colorado. Durango and its adjacent communities would receive approximately 6,700 acre-feet. Recognizing the advantage of such a potential augmentation of its present water supply, the Durango City Council more than three years ago unanimously approved a letter of

intent to participate in the Project by contract with the Animas-La Plata Water Conservancy District for 2,500 acre-feet of water yearly.

Once again, as I did last year in my statement before this Committee, I make a special appeal on behalf of the "Dry Side" farming communities along the La Plata River. The farmlands of the "Dry Side" grow crops of alfalfa, pinto beans, and small grains. There are approximately 400 small farms and ranches included in this section of dry land farms. I grew up on one of them. Having shared with family and neighbors the deepfelt disappointment over potentially bumper harvests that deteriorated and crumbled to nothing because of erratic rainfall and consequently unavailable irrigation water, I repeat my pleas of other years that you help provide us the means of making the best use of the rich soil that is there for man's cultivation. The Animas-La Plata Project, when fully operational, will enable us to capture and store water when it is plentiful, distribute and use it during times of shortage, and thereby stabilize the agricultural production of our farms and ranches. In stabilizing our regional agricultural economy, this Project would rejuvenate the hopes and high expectations of our people and bring reality to their long-deserved aspirations for a better life.

Although the Animas-La Plata Project was at the outset projected to have a benefit-ratio of 1.6:1, a recent study by a recognized economist (Dr. Bernard Anderson, Professor of Economics, Fort Lewis College) reflects ratios in expanded direct benefits of 1.71:1 and in expanded total benefits of 2.82:1 (cf. The Animas La Plata Irrigation Project: A Re-Examination of Regional Benefits and Costs, 1984), reflecting annualized values based on a discount rate of 3.25%, the official discount rate used in 1968, the year the Project was authorized by Congress. Even based on 1984 dollar costs, with a discount rate of 8.125% (the current standard discount rate applied by the Office of Management and Budget), ratios for expanded direct benefits would be .79:1, and for total benefits 1.30:1, the latter easily exceeding the norm for approval of Federal reclamation projects.

Our present Presidential Administration, facing an ever-mounting budget deficit, has appealed to states, counties, and cities to develop their economies through the initiative and entrepreneurial skills that have long been the basis of our national heritage. Given the geographic isolation of Durango and its surrounding communities in southwestern Colorado, and confronted as we are with difficult access to our area over the mountain passes in winter, and with no basic industry to provide employment for many of our youth, we are compelled to rely on the natural advantages of our environment for survival. Accordingly, La Plata County has developed to the fullest extent possible its resources for outdoor recreation, for we do have magnificent scenery and an unparalleled summer climate to attract visitors. Evidence of the recreational uses of our area can be seen in the following statistics for the year 1984:

Purgatory Ski Resort	306,156 users
Durango & Silverton Narrow Gauge Railroad (now operating summer and winter)	169,759 passengers
Mesa Verde National Park (nearby)	516,865 users
La Plata County Airport	158,884 users

While to other parts of the country it may appear to represent an element of conspicuous consumption, a superfluous enterprise, the business of recreation is our basic industry. Without water to sustain it, however, it cannot thrive; it certainly cannot expand sufficiently to enable us to cope with the 19.4% unemployment rate that now besets the youth of La Plata County. The Animas-La Plata Project can and, with your help will, supply that water.

Others in our group will detail the issue of Indian water rights and its potential for disrupting our regional economy. The question of La Plata County's access to water in the event of severe dry spells in the summer, however, is a very real one. Our primary source of municipal water for Durango is the Florida River, and a secondary source is the Animas River, which flows through the city. Our water rights are considerably junior to the reserved water rights of the Southern Ute Indian Tribe and of the Ute Mountain Ute Indian Tribe, which have federally reserved entitlement to water, with a priority date of 1868, the year the reservations were established pursuant to treaty. In times of shortage, the two tribes may be able to legally divert for use on their reservations the full amount needed to supply their needs for agricultural, domestic, and other purposes in spite of any claims their non-Indian neighbors might otherwise have to the waters of these streams. Our goal today is to convey a heightened sense of urgency to this Committee in its deliberations, in order to achieve during this session of Congress the support required to generate $1,250,000 in Fiscal Year 1986 for initial construction, and $3,900,000 in the Fiscal Year 1987 budget for second-year construction of the Animas-La Plata Project. The amount requested is extremely small when compared to the amounts appropriated to the Central Arizona Project, a water project that is no more deserving than, and was to have been built concurrently with, the Animas-La Plata Project.

STATEMENT OF VIDA PEABODY, COUNCIL MEMBER, SOUTHERN UTE INDIAN TRIBE

Mr. Chairman and Members of the Committee:

I am Vida Peabody, member of the Southern Ute Indian Tribal Council. I have joined our Tribal Chairman today in making an urgent appeal in behalf of our Tribe for construction funds for the Animas-La Plata Project. There is no water project in Colorado - indeed, in the entire Southwest - that holds greater promise of economic betterment for the Southern Ute Indian Tribe than this Project.

For our Tribe, the anticipated availability of 26,500 acre-feet of water from the Project has meaning in terms of development of our extensive reserves of coal, the improvement of existing and planned commercial enterprises on the Reservation, and the expansion of opportunities for our children as they look about for new ways to use their education, acquired vocational skills, and native talents.

As the Chairman's statement makes clear, our Tribal Council agreed several years ago to hold in abeyance planned legal action to assert our water rights to most of the tributaries of the San Juan River system, preferring as we do to negotiate a settlement of our claimed rights by means of such a federally supported water project as the one under discussion today. The time is quickly approaching, however, when, without some clear demonstration on the part of the United States Congress that construction of the Animas-La Plata Project has realistic prospects, the members of our Tribe are likely to demand of the Tribal Council that it pursue settlement by alternative means. Accordingly, I add my voice to the others here today in emphasizing the need for prompt action in obtaining funds for the Animas-La Plata Project.

STATEMENT OF ANN W. BROWN, MEMBER, DURANGO (CO) CITY COUNCIL

Mr. Chairman and Members of the Committee:

I am Ann W. Brown, member of the Durango City Council and Mayor pro-tem. As a City official, I feel a strong sense of responsibility for the present and future well-being of Durango and its residents. Central to that well-being is the availability of adequate water for municipal use.

With its present population of approximately 12,800 and with substantial increases in the number of its residents projected in the decade ahead, the Durango Service Area cannot expect to develop adequately its resources, its economy, or its municipal services in the absence of the Animas-La Plata Project.

Already, the capability of the City's water system is nearly exceeded during the summer months, when demand is highest. Moreover, during summers of abnormally low rainfall, the situation assumes critical proportions. Within fifteen years, our water supply deficit will exceed total annual demand by no less than ten percent.

As indicated in the Definite Plan Report, the Project is expected to provide 2,500 acre-feet of municipal and industrial water annually to the City of Durango, obtained pursuant to contract with the Animas-La Plata Water Conservancy District, which itself will receive an additional 2,700 acre-feet of water for other municipal and industrial purposes. Likewise, the South Durango Water District would be provided with 2,000 acre-feet of municipal and industrial purposes for its rural users.

Our present water supply is acquired pursuant to absolute and conditional court-adjudicated water rights in the tributaries of the San Juan River, principally the Animas River and the Florida River. The earliest water right of Durango to water in the Animas River bears a priority date of 1874; the earliest to water in the Florida River, a priority date of 1877. Both these dates are subsequent to the establishment of the Southern Ute Indian Reservation, which was based on an 1868 treaty with the United States. Assuming approval of fund for the construction of the Animas-La Plata Project, these priority dates of water rights lose much of their significance, since there would be ample water for all parties, including the Indians. On the other hand, should the Southern Ute Indians feel compelled to assert their reserved water rights in court, they would have the benefit of legal precedent, both at the federal level and at the state level in the adjudication of these rights.

As Mayor pro-tem of Durango, I would be remiss in my obligation of service to the residents of our area of southwestern Colorado if I failed to urge as vigorously as I can your prompt action on the construction of the Animas-La Plata Project. This is not my first appearance before this Committee. I represented Durango one year ago, citing such factors as cost effectiveness, the existing unreliability of water in our region for domestic, municipal, and agricultural use, and the potential neglect of the vast mineral reserves of the Southern Ute Indian Tribe's reservation, as well as the substantial coal reserves on the Ute Mountain Ute Indian Reservation. I ask that you give careful consideration to all the factors that I have brought to the attention of the Committee. I am confident that careful evaluation of our request will result in your strong, decisive action to provide the funds required to give life to the Animas-La Plata Project.

STATEMENT OF CHRIS A. BAKER, CHAIRMAN, SOUTHERN UTE INDIAN TRIBE

Mr. Chairman and Members of the Committee:

I am Chris Baker, Chairman of the Southern Ute Indian Tribal Council. For more than twenty years, representatives of the Southern Ute Indian Tribal Council have appeared annually before Committees of the Congress of the United States in order to obtain authorization and funding for the Animas-La Plata Project. Our Tribal Chairmen have come all the way from their reservations in southwestern Colorado not only in the interest of the Southern Ute Indian Tribe but also in behalf of the non-Indian communities that lie near our reservation.

You, ladies and gentlemen, represent the United States Government. According to the laws and court decisions of the United States, the Federal Government is the trustee of our Tribe and of all other recognized Indian tribes of this great country. It was the Supreme Court that, in the famous water rights case of United States v. Winters in 1908, formally decreed and established for all time the doctrine of impliedly reserved rights to the water required to sustain Indian reservations. Normally, such reserved rights are assigned by court adjudication a priority date that coincides with the date of the establishment of the reservation. In our case, the water rights to the rivers involved in the Animas-La Plata Project have a priority date of 1868, some twelve years before the city of Durango came into being.

It is this issue of rights to a limited resource, an often severely limited resource, that is at the heart of this present appeal to you, our trustee, for the funds to construct the very project that has been authorized by you or your predecessors for seventeen years. Four years after the Animas-La Plata Project was authorized, a preliminary effort was made to have our tribal water rights adjudicated in a United States District Court. Later in 1976, the United States Government, as trustee to our Tribe and the Ute Mountain Ute Indian Tribe, filed an application in a Colorado water court for an adjudication of the reserved rights held in trust for both Tribes. By stipulation confirmed by court order, trial was postponed pending a decision by the Colorado Supreme Court on similar issues in other Colorado water divisions. It was then that our Tribe began serious consideration of settling the matter by negotiation. We have been told that the Animas-La Plata Project will provide sufficient water for the needs of both Indian tribes, while at the same time amply meeting municipal and industrial requirements of non-Indian communities in southwestern Colorado and the northern part of New Mexico. We have been counseled to be patient. We have been advised that litigation is expensive and that it generates hard feelings. We have been assured that your Committee and the entire United States Congress, because of the fiduciary relationship that binds us, will appropriate tne funds for a water storage and distribution system that will enable us to continue living in harmony with our non-Indian friends and neighbors.

On the one hand we hear from officials in Washington, D.C., that Indian reservations must be made to grow more self-sufficient. The Southern Ute Indian Reservation has vast coal reserves. Adequate, dependable quantities of water are prerequisite to any substantial exploitation of this considerable resource. Water for irrigation is necessary for the future utilization of tribal lands. Certainly, these two areas of activity alone would improve our self-sufficiency, as the Congress so ardently desires. Yet, on the other hand, we find that although we come to you year after year for the means to advance toward the level of self-sufficiency so insistently - often stridently - demanded of us, we are

denied water, the commodity most essential in the arid lands on which we live, for the simple reason that appropriations for an adequate water supply are not forthcoming.

Representing the thousand members of the Southern Ute Indian Tribe, I make this further appeal to you, therefore, to act promptly and decisively to fulfill the declared intent of the Congress of the United States by providing construction funding for the Animas-La Plata Project.

STATEMENT OF DORIS BRENNAN, LA PLATA (CO) COUNTY COMMISSIONER

Mr. Chairman and Members of the Committee:

I am Doris Brennan, County Commissioner, La Plata County, Colorado, and a lifetime resident of Durango, Colorado. I appreciate very much this opportunity to appear before you to seek approval of funds for the construction of the Animas-La Plata Project.

During last November's election, I based my candidacy in large part on a pledge of vigorous, unequivocal backing of this Project, at the local level, the regional level, and the national level. Today, therefore, before this Committee of the Congress of the United States, I speak in behalf of the residents of our County, who by their overwhelming endorsement of my candidacy at the polls last November showed demonstrably the strength of their commitment to this important water resource development project.

As a County Commissioner I must see to the interests of all our La Plata County residents, including those who reside on the Southern Ute Indian Reservation. There are few issues that divide the Indians from the non-Indians in La Plata County; each group is sensitive to the needs and concerns of the other, and there is an excellent working relationship between the governmental entities of adjacent communities and that of the Tribe. Only on the issue of water - and this issue is charged with electrifying potential - do I recognize a potential parting of the ways. The tributaries of the San Juan River serve the municipal, domestic, industrial, and agricultural needs of both groups. These tributaries are the subject of conflicting claims, not vigorously pursued at this juncture, owing to the hope and expectation that the resources represented in the Animas-La Plata Project afford the basis of compromise, of lasting settlement without detriment to either party.

The costs of litigating a lasting settlement are of a magnitude that compels us to pursue preferable alternatives, the most likely one being that of providing amply for the needs of the Southern Ute Indian Tribe and those of the other residents of La Plata County through construction of the water storage facilities envisioned in the Animas-La Plata Project.

STATEMENT OF ART ISGAR, BOARD OF DIRECTORS, LA PLATA WATER CONSERVANCY DISTRICT OF COLORADO

Mr. Chairman and Members of the Committee:

I am Art Isgar, member of the Board of Directors of the La Plata Water Conservancy District. It has been my privilege to appear before this and other congressional committees on several other occasions, the most recent being in 1984. In each instance my purpose has been the same: to speak in behalf of the many ranchers and farmers of southwestern Colorado who need the water from the Animas-La Plata Project to ensure their survival in the years ahead.

I speak in particular for those of us who have family farms and ranches in an area of La Plata County, Colorado, known as Fort Lewis Mesa. Many of the agricultural lands there have been handed down from generation to generation within the same families, with parents trying to preserve in their children the same love of the soil, the same regard for the ethical values of hard work and honesty that they themselves had passed on to them. These values, as well as the farms and ranches where they are inculcated, are being threatened, if not actually lost, as a result of the economic stresses encountered by those who have labored so hard over the years to sustain them. Just as there has been a decline of approximately 64% in acreage farmed in this country as a whole during the last fifty years, so too is there a substantial decline in agricultural acreage in our area of southwestern Colorado.

A major part of our difficulty is not poor management, not over-extended purchases of adjacent ranchland, and not unsound planning. No, our problem is simply the lack of a reliable source of water to supplement erratic rainfall. We know from the experience of those occasional years of plentiful rainfall that our unusually rich, fertile soil will produce bountiful harvests of pinto beans, alfalfa, and small grain crops. At the same time, let me say that we have known, and we have borne, the crushing burden of disappointment that attends the failed harvest when dry spells evaporate our limited supply of irrigation water.

Members of my family and I have assisted in planning the irrigation systems that will result from the construction of water storage facilities, ditches, and pumping stations needed to put the Animas-La Plata Project into operation. Funds for this construction are an imperative need for the benefit of our farmers and ranchers.

Actually, we recognize that the benefits to our own agricultural enterprises are but a single aspect of this Project. We know, for example, that a total of 52,500 acre-feet of water for municipal, industrial, and agricultural uses will be allocated for the benefit of the State of New Mexico. Also, we know the impact the Project can have on resolving the water rights claims of the two Colorado Indian tribes, the Southern Utes and the Ute Mountain Utes. Additionally, we are aware that the Project will add substantially to the economic base of our area by providing enhanced opportunities for visitors to enjoy boating, fishing, hiking, camping, and picnicking. Ridges Basin Reservoir, for example, will accommodate up to 1,800 people per day, an indisputable source of income for our business people and a recognized source of sales tax revenue for our city and county governments, both of which rely heavily on sales taxes to maintain services.

Because of the multiple benefits that are to be derived from the Animas-La Plata Project and because of the crucial importance it has for the agricultural economy of our area, I ask again for your favorable consideration of our request for its construction. We seek $1,250,000 in federal funds for Fiscal Year 1986 for initial construction, and $3,900,000 in Fiscal Year 1987 for second-year construction. Given its obvious benefits to regional agriculture, the additional water supply that it will make available for municipal and industrial uses in Colorado and New Mexico, its potential for developing a sound economic structure in our county, and its capacity to resolve Indian water rights claims while at the same time generating badly needed tax revenues for our city and county governments, I cannot think of a more prudent expenditure of federal funds than that represented by the Animas-La Plata Project.

STATEMENT OF BRICE LEE, MANAGER, SOUTH DURANGO WATER DISTRICT

Mr. Chairman and Members of the Committee:

I am Brice Lee, Manager and former Board member of the South Durango Water District. I join the representatives of our District and other water districts in asking your support for construction money to make the Animas-La Plata Project a living reality instead of the perennial unheated boiler on the back burner of the Appropriations stove. Our South Durango Water District serves the needs of several thousand users, and its water supply comes from the 1.333 cubic feet per second of waer to which it has a prior appropriative right in the Animas River. Although we have been able since 1965, when the District was formed, to satisfy our customers' requirements by means of this 1.333 cubic feet per second, the day is fast approaching when a supplemental source will be essential. To illustrate what I mean, the population of La Plata County, according to the United States Census Bureau, was 19,199 in 1970 and had increased to 27,175 by 1980, an increase of 29.35%. The Demography Office of the State of Colorado projects a population in 1990 of 38,100, or an increase of 28.67% in ten years from the last census. Moreover, the State Demographer has calculated that by the year 2000 the population of La Plata County will reach 46,551, or an increase of 41.62% over the 1980 census figure.

There is no way that we can hope to supply our District's customers without a system of water storage for the area, with a well-managed system of distribution. The Animas-La Plata Project is the obvious, and indeed the only practical, means of enabling the South Durango Water District to fulfill its obligation to those whom the District is required by law to serve. Recognizing the urgency of obtaining an assured source of additional water, our Board of Directors voted unanimously to endorse a letter of intent to purchase 2,000 acre-feet from the Ridge's Basin Reservoir, the principal storage facility of the Animas-La Plata Project. We ask you ladies and gentlemen, therefore, to give favorable consideration to our request for action - expressed in appropriated moneys - on this vitally important Project.

Thank you.

STATEMENT OF JOHN PORTER, MANAGER, DOLORES WATER CONSERVANCY DISTRICT

Mr. Chairman and Members of the Committee:

I am John Porter, Manager, of the Dolores Water Conservancy District, the project sponsor for the Dolores Water Reclamation Project. Having experienced the satisfaction of seeing several construction phases of the Dolores Project move forward to completion during the past several months, I am here to ask for your continued funding of this important undertaking. The following is a brief summary of our progress so far:

(1) McPhee Dam and Great Cut Dike - Completed
(2) Dolores Tunnel - Completed
(3) Dolores Sewer Treatment Plant - Completed
(4) Clearing of McPhee Reservoir Area - Completed
(5) Great Cut Pump Plan and Reach 1 of the Dove Creek Canal: Nearing completion
(6) Cultural Heritage Center: Approximately 50% completed
(7) Access Roads North of McPhee Dam: Approximately 40% completed
(8) Work on Recreation Areas: Nearing completion, with exception of House Creek Recreation Site

Construction of the following components of the Project is either just beginning or will begin during the summer of the current year:

(1) Fairview Pumping Plant and Lateral System
(2) Cahone Pumping Plant and Lateral System
(3) Reach 2 of Dove Creek Canal

Planning and designing of a recently added element of the Project, the McElmo Creek Salinity Unit, pursuant to Public Law 93-320, will commence in 1985.

I think it fitting to mention our record of consistent, uninterrupted, and efficient use of monies appropriated in other years in order to give this Committee the assurance that every dollar which we seek this year for the Dolores Project is a dollar which will be prudently spent and will produce tangible evidence of the good stewardship of the Dolores Water Conservancy District. One of our major concerns is that we avoid the inevitable waste that occurs when projects are suddenly halted because of a hiatus in funding. Later, when the elements of the task must be coordinated all over again, when resources previously abandoned have to be reassembled, the cost is often greater than it would have been without the disruption of the program.

The Bureau of Reclamation for the Upper Colorado Region has stated that our program for Fiscal Year 1986 can and should accommodate a total of $35,000,000 for construction of components of the Dolores Project. Our Board of Directors has been informed that the President's budget proposal to the Congress reflected an allocation of only $24,000,000. These are troubled times, and we recognize your desire to trim expenditures wherever feasible. That is a part of the function of this Committee; however, I respectfully ask that the Committee consider the constructive benefits of keeping a full head of steam in the engine as it approaches the long, steep grade of a mountain pass.

At the same time, the Committee should not lose sight of the water shortage that will remain in the arid lands of the Four Corners region, pending construction of the water storage facilities of the Animas-La Plata Project. The additional 70,000 acres that can be cultivated successfully with water from the Animas-La Plata Project represent bright hope for a now agriculturally immature economy. The waters of the Animas-La Plata will do more than make the desert bloom in the poetic sense; rather, they will ensure that our farmers and ranchers no longer must face annually the bleak prospect of dust-covered grain crops insusceptible of harvest for their livestock.

STATEMENT OF JUDY KNIGHT, VICE CHAIRMAN, UTE MOUNTAIN UTE INDIAN TRIBE

Mr. Chairman and Members of the Committee:

I am Judy Knight, Vice Chairman of the Ute Mountain Ute Indian Tribe. I am proud of this opportunity to accompany our Tribal Chairman, Ernest House, to this meeting of your Committee and to speak in behalf of our Tribe in support of the Animas-La Plata Project. It is important that the Congress of the United States recognize that this Project has had the full endorsement of our Tribal Council since its authorization in 1968. For several years, our Tribal representatives have appeared before this Committee and other Committees of the Congress, making and repeating appeals for the needed appropriations to have the Project constructed. So far, however, there has been limited response to our requests; in fact, no construction money has been approved, despite our expectations and high hopes.

Having been given repeated assurances that nearly 26,000 acre-feet of water for irrigation will be diverted to our Reservation from the Ridges Basin Reservoir, one of the two offstream reservoirs of the Project, as well as 6,000 acre-feet of water for municipal and industrial purposes, our Tribal Council has, year after year, placed its faith in the United States Congress to meet its commitment to us. Our people, however, are beginning to ask: What are the proper limits of the faith and good will of the Tribal Council? Many members of the Ute Mountain Ute Tribe contend that our Tribal water rights can be expected to materialize more quickly through the painful process of court action. Our Tribal Council prefers not to pursue this course. It is costly; it alienates our non-Indian neighbors; it raises doubts about our confidence in the fairness and wisdom of the United States Congress. Yet, after so many years of patient cooperation, our Tribal Council is approaching the limit of its capacity to take at face value the promises of the past. On behalf of my Tribe, therefore, I ask the members of this Committee to delay no longer in urging approval of the Animas-La Plata Project.

STATEMENT OF ERNEST HOUSE, CHAIRMAN, UTE MOUNTAIN UTE INDIAN TRIBE

Mr. Chairman and Members of the Committee:

I am Ernest House, Chairman of the Ute Mountain Ute Indian Tribe, located in southwestern Colorado, with tribal headquarters in the town of Towaoc, Colorado. There are approximately 1,500 members of the Ute Mountain Ute Indian Tribe, and our reservation comprises slightly more than 448,000 acres. We have been told that when the Animas-La Plata Project comes into being we can expect an allocation of 25,800 acre-feet of water, an amount sufficient to irrigate 11,600 acres. In addition, 6,000 acre-feet of water for municipal and industrial use of the Tribe would be provided by the Project, this amount being necessary if we are to develop our coal resources.

The Animas-La Plata Project has been looked forward to for several years by our Tribe. Our reservation is in an unusually dry and arid area. On many occasions we have had to haul water by truck in order to satisfy the domestic requirements of our tribal headquarters and tribal members. We are participants in two water projects which, in combination when completed, should enable our tribe to move forward toward a self-sustaining economy. The first of these, the Dolores Project, due for completion five years from now, will help alleviate our problem of water shortage but will not do so entirely. Toward the objective of making effective use of the water from the Dolores Project, the Tribe is investing some $600,000 for improvements in its domestic water system. The Animas-La Plata Project is the other vital half of the total system required for our survival as an economically viable entity.

Without both of these projects being constructed soon, our Tribe will have to examine alternatives. Reserved water rights, under the Winters Doctrine established by the United States Supreme Court in 1908, provide the basis of one such alternative. Flowing diagonally across a good portion of the northern half of our reservation is the Mancos River, a tributary of the San Juan River. Our rights to the waters of the Mancos River have not yet been quantified. At present the heirs and successors to non-Indian homesteaders who established farms near the Mancos River divert approximately 40,000 acre-feet of water from it annually. Should our Tribe be compelled to asserts it water rights in the forum of a federal or state court, which we prefer not to do for obvious reasons (cost, ill will, and uncertainty of a court ruling), I think you can imagine the disruptive effect this would probably have in our area, particularly in light of the fact that the non-Indian users have established a contractual relationship with a quasi-governmental agency, a water conservancy district, which monitors allocations of water from the U. S. Bureau of Reclamation's Jackson Gulch storage facility on the Mancos River. In fact, the non-Indian users, through the water conservancy district, have already repaid more than $450,000 of the cost of the water storage facility. They could not be expected to accept willingly the loss of such an investment.

Thus, in addition to the fact that the Animas-La Plata Project was an expression of the intent of the United States Congress which authorized it in 1968, as well as the fact that for many years now the members of the Tribe have been led to believe that the trustee responsibilities of the Federal Government would find fulfillment in the construction of this Project, there is now a compelling degree of urgency about it as we approach the crossroads of solutions to our problems involving entitlement to needed water. Our Tribal Council once again asks for your help. Our people have been patient, probably more patient than others would be if they were in our place; that is, if they lived on our arid, water-scarce reservation, remembering the promises but seeing little evidence of progress.

STATEMENT OF GERALD R. ZIMMERMAN, EXECUTIVE DIRECTOR, UPPER COLORADO RIVER COMMISSION

Summary of Specific Action Requested

Appropriation of funds recommended by the representatives of the States of Colorado, New Mexico, Utah, and Wyoming for the Colorado River Storage Project and participating projects.

Mr. Chairman, the Upper Colorado River Commission is an interstate compact administrative agency created by the Upper Colorado River Basin Compact of 1948. The State members of the Upper Colorado River Commission are: Colorado, New Mexico, Utah, and Wyoming. Since its inception, the Commission has actively participated in the development, utilization, and conservation of the water resources of the Colorado River Basin.

The member States of the Upper Colorado River Commission have traditionally given strong support to water resources development in the Upper Colorado River Basin and in particular to the Colorado River Storage Project and participating projects. We who are interested in water resources development in the Basin appreciate the opportunity to provide testimony before this subcommittee in support of the appropriation of funds to continue the construction and operation of the Colorado River Storage Project and participating projects in Fiscal Year 1986.

Representatives of each of the Commission's member States will submit testimony to this subcommittee in support of specific appropriation requests that reflect the official position of each State with respect to the development of the water resource projects and programs involving the Colorado River Storage Project and participating projects. Such specific requests will not be repeated here; however, they are fully supported by the Commission. As you will note, the States' requested funding for the Fiscal Year 1986 ongoing program for the Colorado River Storage Project and participating projects is consistent with the proposed President's Budget for the Bureau of Reclamation. We are willing to reluctantly accept this reduced funding in the ongoing program to address the Federal deficit. However, the Commission is opposed to and will resist any further reduction in the proposed funding for these projects. Through these requested appropriations, water resource projects and programs involving the Colorado River Storage Project and participating projects can be funded at a level which will benefit the local, regional, and national economies.

In addition to the ongoing program, the Upper Colorado River Commission supports the new construction start requested by its member States for the Animas-LaPlata Project in Colorado and New Mexico. The appropriation of $1.35 million will provide the initial funding necessary to begin construction on this much needed project. This and other new starts are necessary to meet the growing need for additional water supplies in the Upper Colorado River Basin States. The Commission suggests that the water resources development program in the Upper Colorado River Basin provides benefits not only to the Upper Division States but also provides capital improvements that have national benefits.

The Upper Colorado River Commission supports the development and implementation of the Colorado River Salinity Control Program as described in Public Law 93-320 and recently amended by Public Law 98-569. This program is designed to maintain salinity levels in the Colorado River system within established water quality standards and is endorsed by the seven Colorado River Basin States. A more detailed statement on this program will be presented in the testimony of the Colorado River Basin Salinity Control Forum.

Mr. Chairman, on behalf of the Upper Colorado River Commission, thank you for the opportunity to present this statement for the Committee's consideration.

STATEMENT OF THE COLORADO RIVER BASIN SALINITY CONTROL FORUM

For the Department of the Interior

Bureau of Reclamation	
Construction	$ 5,362,000
Plan Formulation	4,418,000
Advance Planning	1,200,000
Sub Total	$10,980,000
In addition an increase for	
Paradox Valley Unit, Colorado	$ 6,600,000
Grand Valley Unit, Colorado	2,000,000
TOTAL	$19,580,000

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The waters of the Colorado River system serve some 17 million people and irrigate about 1.6 million acres in the seven Colorado River Basin states. The river also provides domestic and irrigation water to Mexico. Salinity has long been recognized as one of the major problems in the river. Water users in the lower reaches of the river system presently suffer significant adverse impacts due to the river's salinity. It has been estimated that salinity damages currently amount to $100 million a year. Without salinity control measures, the river's salinity is projected to increase, further impairing the usefulness of this water supply and the economic damages suffered by water users are expected to double by the turn of the century.

The Basin states concerns with the river's increasing salinity led them to create the Colorado River Basin Salinity Control Forum in 1973. The Forum, whose members are appointed by the governors of the respective states, developed a salinity control policy that calls for maintaining salinity concentrations at or below those levels found in the lower river in 1972 while the Basin states continue to develop their compact apportioned waters. The Forum has a continuing responsibility to see that a salinity control plan is implemented to meet the policy objectives.

In 1974, after discussion between the federal government, the Republic of Mexico, and the seven Colorado River Basin States, Congress enacted the Forum sponsored Colorado River Basin Salinity Control Act (P.L. 93-320). Title I of the Act Established a program to reduce the concentration of salts in the Colorado River below Imperial Dam, the 1st diversion point in the United States, so that the United States could honor its commitments to Mexico. In Title II, the Act established a program which allowed the states and the federal government to work together to prevent salinity increases in the Colorado River above Imperial Dam, benefiting users in the United States as well as Mexico. The 1974 Act also created a Colorado River Basin Salinity Control Advisory Council, composed of governor appointed representatives of the Basin states, to advise the Secretaries of the Interior and Agriculture and the administrator of the Environmental Protection Agency as to needed annual adjustments to the salinity control effort.

In 1984, Congress enacted much needed amendments to the 1974 Act that were advanced by the Forum. The amendments, Public Law 98-569, authorized additional activities for the Departments of the Interior and Agriculture that are needed in order to meet the objectives of the Act.

The Advisory Council, in working with Interior, made specific recommendations in its 1984 Annual Report relative to Fiscal Year 1986 funding of the salinity control efforts consistent with the newly enacted amendments. The President's proposed Fiscal Year 1986 budget for Colorado River Basin salinity control activities for Interior provides a substantially lower level of funding. A comparison of the Council's recommendations and the President's proposals for 1986 funding of the salinity control program are as follows:

Salinity Control Activities	Proposed Funding	
	Advisory Council	President's Budget
Department of the Interior		
Construction		
Paradox Valley Unit	$ 15,000,000	$ 1,782,000
Grand Valley Unit	9,300,000	3,505,000
Las Vegas Wash Unit	75,000	75,000
Advanced Planning	1,550,000	1,200,000
General Investigations	5,100,000	4,418,000

The proposed level of funding in the President's budget seriously jeopardizes the continued progress and effectiveness of Colorado River salinity control efforts. It would preclude the initiation of construction of the brine injection well at the Paradox Valley Unit, one of the most cost effective salinity control projects and delay the start of construction on Stage II of the Grand Valley Unit.

At a time when the nation faces significant financial difficulties, it is recognized that the Advisory Council's funding recommendations may not be totally achievable. However, to assure that salinity control efforts move forward in a timely manner, construction should not be interrupted on the Paradox Valley Unit and work should continue on the Grand Valley Unit. To accomplish this, the President's budget needs to be increased by $6.6 million for the Paradox Valley Unit and $2.2 million for the Grand Valley Unit. The federal government is not paying the entire cost of these salinity control activities. A 25 percent state reimbursement of federal expenditures is being made for the Paradox Valley and Grand Valley Units.

Salinity is one of the major problems in the Colorado River System. It is imperative that the salinity control activities not be curtailed and that adequate funding be appropriated in 1986 so that the Congressionally directed salinity objectives can be achieved.

Statement of F.F. (Chano) Montoya, Chairman, La Plata, New Mexico, Water Conservancy District

Mr. Chairman and Members of the Committee:

I am Chano Montoya, Chairman of the La Plata, New Mexico, Water Conservancy District, and one of the landowners of the La Plata, New Mexico, area on whose behalf I speak today in a further appeal for funds for the Animas-La Plata Project. I had the privilege of coming before this Committee in 1982 and 1983 for the same purpose.

The total arable area suitable for irrigation by the Project amounts to 70,100 acres. Of this total, 61,470 acres are in Colorado, and 8,630 acres are in New Mexico. Of the 8,630 acres to be irrigated in New Mexico, there are 3,720 acres currently under irrigation; however, beset as we are with sporadic rainfall in our growing season, and subject as we are to the resulting diminished stream flow, those 3,720 acres can hardly be said to be dependably under irrigation. What we need, therefore, is a reliable, continuously available supply of water and the administrative organization to manage the storage and distribution of Animas River water. Additionally, we need to provide municipal water for the cities of Aztec, Bloomfield, and Farmington. The Animas-La Plata is the single answer to these multiple needs, and that single answer offers to our people the reasonable expectation of a stable agricultural and industrial economy.

Your effort to win approval of the construction funds for the Animas-La Plata Project will be appreciated by the people of northern New Mexico and southwestern Colorado - people who have worked cooperatively and unselfishly to develop the concept of shared benefits and equitably apportioned responsibility.

WYOMING WATER RESOURCE DEVELOPMENT PROJECTS

STATEMENT OF GOV. ED HERSCHLER OF WYOMING

Mr. Chairman and Members of the Committee:

The functions and activities of the United States Bureau of Reclamation related to water development in the State of Wyoming continue to be of interest to the people of the State. Water resources development continues to be a major concern to Wyoming, as our population grows and new industrial and energy developments materialize. The continued development of our water resources is of prime importance to the people of our Nation if we are to satisfy our Country's escalating energy demands. The relationship of energy and water development is unmistakeably apparent.

Since the adoption of a comprehensive water resources development program by the 1982 Wyoming Legislature, some 16 projects have been authorized for construction including one reservoir enlargement and one new reservoir, with the remainder being rehabilitation projects in nature.

We are most encouraged by the level of funding proposed for continuing pre-construction work for the Enlargement of the Buffalo Bill Dam on the Shoshone River. The suggested appropriation for Fiscal Year 1986 indicates that the Bureau of Reclamation's level of commitment for moving this project ahead is in keeping with the 1982 Wyoming Legislature's appropriation of $47,000,000. We would urge that funding be continued under the Construction Program of the Bureau of Reclamation for Dam Safety and Irrigation System Rehabilitation. The relatively minor cost of these programs is a small price to pay to protect the much larger investments made by the Federal Government, irrigators and other water users in the past. This funding also bolsters Wyoming's agricultural and Ag related sectors. Investment protection also necessitates the Bureau's operation and maintenance program. The State of Wyoming fully supports appropriations to remedy seepage problems at the Fontenelle Dam and further believes that this work is important to the proper operation of the Colorado River Storage Project Reservoir System.

General investigations carried out by the Bureau's Planning Program will be of increasing importance in the future as demands for water and power grow. The data collected in these investigations is useful even if the project under the investigation is determined to be infeasible. Information is requisite in all water development considerations, and as water demands have increased, so has the need for information.

The State of Wyoming continues to support the reclamation program of the Bureau of Reclamation which has provided many benefits to Wyoming, the surrounding region, and the Nation as a whole. These benefits, provided as they are by a largely self-supporting program, make the reclamation program one of the most successful of all Government programs. The many benefits that have been realized to the Nation far exceed the cost incurred with the Federal Government and the states.

Thank you Mr. Chairman and Committee members for the opportunity to present this statement for the official record.

CENTRAL UTAH PROJECT

STATEMENT OF GOV. NORMAN H. HANGERTER OF UTAH

Mr. Chairman and Committee Members:

The citizens of the State of Utah, join with me in expressing appreciation to this committee for its record of support for the funding of the Central Utah Water Project, a water project planned and being constructed by the United States Bureau of Reclamation and sponsored by the Central Utah Water Conservancy District. The present plan of the project is the result of many years of consultation and coordination by the Bureau of Reclamation, the sponsoring organizations, State and Federal agencies, irrigation, power, civic organizations, and individuals.

As Governor of the State of Utah, I appear before you today to request your continued support of the $68,448,000, for the Central Utah Project, as requested by the President of the United States, in his Fiscal Year 1986 Budget recommendations to the Congress of the United States.

During the past two or three years the increased funding made available by this committee has resulted in a more realistic and economical approach to its construction program. Adequate funding will be needed to continue the construction program. Careful and timely development and efficient and wise use of our limited water resources will always remain as a key factor in Utah's growth. A lack of timely development will restrict the future progress of the state.

Many citizens of the State of Utah have expressed concern to me over the perpetual delay in the construction of the units of the Central Utah Project. The Project is a vital part of our state wide water plan and will provide critically needed water supplies to the Central Utah area. The impacts of the project will be felt by every person and establishment in the State of Utah.

Conceptually, the Central Utah Project includes a transbasin diversion of a portion of Utah's long established water entitlements from the Colorado River. The Project will develop water for municipal and industrial

use, irrigation, hydroelectric power, recreation, and fish and wildlife enhancement. It will also provide benefits for flood control, water quality control and will permit continued area development.

The Central Utah Project has been promoted by local groups and government agencies since about the turn of the century. Continuous investigations have been conducted by the U.S. Bureau of Reclamation since 1945. The Bonneville and Upalco Units received Congressional authorization for construction as Participating Projects of the Colorado River Storage Project Act of 1956. Construction on the Bonneville Unit was not started until ten years later in 1966.

Since that initial construction start, of the Bonneville Unit, the construction has been slow, which has complicated and created serious economic problems for the District and the citizens of the State of Utah. We believe the Congress of the United States has made a firm commitment to the project, but this commitment has not been complied with through the consistently slow delayed activities by those responsible to plan, design and construct the project.

A recently completed review by the Governor's office of the Bonneville Unit of the Central Utah Project assured the citizens of he State and the Federal Government that the plan of the Unit was still vital and consistent with the States Water Plan. The results of the review were positive and it verified that the construction of the project needs to be expedited to completion. The level of funding has increased over the most recent years to a point where it is now a realistic construction program. It should not be delayed.

The Bonneville Unit is supported by a Repayment Contract dated December 28, 1965 between the Central Utah Water Conservancy District and the United States of America. The long delay, 19 years in construction status by the United States Bureau of Reclamation, is now requiring that a Supplemental Repayment Contract of up to an additional $335 million dollars be entered into by the Central Utah Water Conservancy District. This Supplemental Repayment Contract, negotiated over the past several months, is supported by a Central Utah Water Conservancy District Resolution dated March 14, 1985, (Copy attached).

The Central Utah Water Conservancy District has had in place, since June of 1971, a 50,000 acre feet petition for the delivery of Central Utah Project municipal and industrial water to the Salt Lake County Water Conservancy District. This petition is to provide the water supply to support the heavily populated Salt Lake County area. To deliver the water at a quality to meet Federal and State Health Standards, the Central Utah Water Conservancy District has constructed water purification plants to be ready to treat project water. The Salt Lake County Water Conservancy District, in turn, is expending funds for additional facilities which are required for them to accept and make delivery of project water from the Jordan Water Purification Plant and the Jordan Aqueduct System.

Utah's economic health has been showing growth improvements. A healthy forecast for future industrial and resource growth will be determined by the development of the State's limited water supplies. It is, therefore, imperative that the Central Utah Project continue to rank high in the State of Utah's priorities for the development of its economy and to meet the water requirements of its citizens. I enlist the same priority by those who are responsible for its construction.

I encourage this committee to support the President's Fiscal Year 1986 Budget request and include his recommended funds in the Appropriation Bill for Water and Energy.

The President's Funding Budget request is as follows:

Bonneville Unit	$62,304,000	Construction
Jensen Unit	1,516,000	Construction
Upalco Unit	2,612,000	Construction
Uintah Unit	250,000	Planning
Fish, Wildlife & Rec.	1,766,000	Non-Reimbursable
TOTAL	$68,448,000	

Again, I express the States recognition of this committees record of support to the Central Utah Project.

Thank you.

RESOLUTION

WHEREAS, this District and the United States acting through the Bureau of Reclamation have been negotiating and have prepared several drafts of a proposed Supplemental Repayment Contract; and this Board has reviewed and is thus familiar with the current working draft which is dated February 22, 1985; and

WHEREAS, at the last public negotiation sessions proposal were advanced by this District which have not yet been incorporated into the working draft; and

WHEREAS, the parties have agreed on the additional authorization needed to cover the anticipated additional costs of Bonneville Unit M & I water;

NOW, THEREFORE BE IT RESOLVED; that this Board hereby authorizes and approves inclusion in the final draft of the Supplemental Repayment Contract an agreement by this District (subject to the other provision of the contract) to repay the reimburseable costs properly allocated under Federal Reclamation law to Bonneville Unit M & I water up to but not exceeding an additional $335,000,000; plus 10% for contingencies.

RESOLVED further, that this Board acknowledges that the 1965 Repayment Contract is to remain in effect and that under said contract this District has already agreed to pay such reimburseable M & I Costs up to but not exceeding $140,408,000 and this District has prepaid an additional $10,000,000; and that this $335,000,000 additional repayment authorization (when added to the $140,408,000 authorized in the said 1965 Contract and the $10,000,000 already prepaid) will obligate the District to pay said reimburseable costs up to but not exceeding a total of $485,408,000 for M & I water use;

RESOLVED, further that this Board acknowledges that this M & I water authorization will be in addition to the $16,400,000 irrigation water obligation which is to be paid by the irrigation water users;

RESOLVED, further that the Board requests that the Supplemental Repayment Contract now being finally drafted incorporate the district's suggestions made at the last public negotiation sessions and that it then be brought before the Board at its next Regular Meeting now scheduled for April 11, 1985, for further review, approval, and referred to the waters for their approval.

CERTIFICATE

I certify that the foregoing is a true and accurate copy of a resolution adopted by the Board of Directors of the Central Utah Water Conservancy District on March 14, 1985.

Lynn S. Ludlow
Secretary

STATEMENT OF DON CHRISTIANSEN, PRESIDENT, CENTRAL UTAH WATER CONSERVANCY DISTRICT

Mr. Chairman and Committee Members:

I am Don Christiansen, President of the Central Utah Water Conservancy District, which encompasses 12 counties in the State of Utah and approximately 80% of the States population. I appreciate the opportunity to appear before you today in behalf of the citizens of the District.

This will be the nineteenth appearance by a representative of the District in support of funding for the Central Utah Water Project which is a extremely vital water project to the State of Utah. I believe we would all agree that this is too many years to request funding for a project which was scheduled in its Definite Plan report prepared by the U. S. Bureau of Reclamation to be completed in sixteen years. The project is so vital to the State of Utah to meet its water requirements that if it takes another nineteen years the District and the State has no choice but to appear before this committee in support of funds for the Central Utah Project. Let's hope this will not be the case.

Appropriations For Fiscal Year 1986

The District supports the President's Fiscal Year 1986 Budget Recommendations for funding of the Central Utah Project and requests this committee to include these funds in the Water and Energy Appropriation Bill. The President's budget recommendations were as follows:

Bonneville Unit	$ 62,304,000	Construction
Jensen Unit	1,516,000	Construction
Upalco Unit	2,612,000	Construction
Uintah Unit	250,000	Planning
Fish, Wildlife & Recreation	1,766,000	Non-Reimbursable
Total	$ 68,448,000	

The District's position of support is set forth in the attached Resolution unanimously approved by the District's Board of Directors.

For a variety of reasons it has been difficult to establish a reasonable level of momentum to plan, design and construct the Units of the Central Utah Project that result in a realistic economical construction program. It has been only during the last two or three years that such a program has been carried out. It is a disappointment to the District that the U. S. Bureau of Reclamation did not more effectively coordinated the construction program so that the funding level appropriated in Fiscal Year 1985 could not have been utilized in 1985 for construction with an equivalent construction budget request for Fiscal Year 1986. The District has done and will do what it can to help expedite the projects construction program and it solicits your continued support for funding.

Utah's Need For The Project

The Bonneville Unit of the Central Utah Project is the largest and most involved of the various units included in the Colorado River Storage Project Act in which the Central Utah Project was authorized as a Participating Project. This project has been under construction since 1966 and is less than 50% completed. Due to the long delay in its construction and to assure that the water to be made available from the unit is still consistent with the State's Water Plan, last year the Governor of the State of Utah conducted a review of the Bonneville Unit. The review was to verify that the plan for the Unit is still compatible with the State Water Plan. A Review Team of State technicians were appointed to conduct the review. After months of study and numerous public meetings which were held throughout the District to receive citizens input, the results of the study verified the need for the project. It included an appeal that its construction be expedited so that the water requirements consistent with the State Water Plan could be provided. The review did recommend some adjustments to the original plan and these are being analyzed in relationship to the total plan and will be considered in its construction. The basic overall conclusion of the Review was that the State needed the Project and that the Project should be expedited.

Supplemental Repayment Commitment

On December 28, 1965 the Central Utah Water Conservancy District entered into a Repayment Contract with the United States Government to repay the reimbursable costs for the construction of the Bonneville Unit of the Central Utah Project. The provisions of the contract resulted in this District commiting to repay $150 million dollars for the construction of the Unit. The long unrealistic construction program, the impact of inflation and a variety of other reasons, has resulted in the projected total of reimbursable costs to complete the project has exceeded the 1965 Repayment Contract Commitments.

To remedy this repayment problem the District has over the past several months participated in extensive negotiations with the U. S. Bureau of Reclamation to increase the repayment commitments by the District through a Supplemental Repayment Contract. The District is preparing to commit itself up to an additional $335 million dollars of repayment of appropriate allocated reimbursable costs. The Supplemental Contract has as to form been approved by the District's Board of Directors. The contract is still subject to approval by the United States Secretary of Interior and will require the approval of the citizens within the District. The District's approval is set forth in the attached resolution unanimously passed by the District's Board of Directors at its March 14, 1985 Board of Director's Meeting. The District proposes to complete the contract procedure requirements and officially entering into such a contract as early as procedures will permit. The other units of the Central Utah Project constructed or under construction are covered by adequate repayment contracts.

Conclusion

In conclusion, I would like to review the key issues involved.

1. The State of Utah and the citizens of the Central Utah Water Conservancy District need this vital water project. This was verified by the Governor's recent State Review.

2. The Central Utah Water Conservancy District encourages the U. S. Bureau of Reclamation to expedite the construction of this project to make it a more reasonable, realistic, and economical construction program. The District encourages this Committee to continue to provide the funds for such a construction program to complete the Project under the terms and commitments of the existing Repayment Contracts and the present Supplemental Repayment Contract being negotiated to build the Bonneville Unit.

3. The Central Utah Water Conservancy District has indicated a willingness to commit itself to repay the appropriate and equitable allocated reimbursable costs.

I appreciate this opportunity to appear before you and thank you for it.

RESOLUTION

WHEREAS, the President's Fiscal Year 1986 budget recommendations to the Congress of the United States included the following request for new funds for the Central Utah Project:

Bonneville Unit	$ 62,304,000	Construction
Jensen Unit	1,516,000	Construction
Upalco Unit	2,612,000	Construction
Uintah Unit	250,000	Planning
Fish, Wildlife & Recreation	1,766,000	Non-Reimbursable

and,

WHEREAS, officials of the U. S. Bureau of Reclamation have informed this District that with the carry over of funds from Fiscal Year 1985 and the recommended new funds for Fiscal Year 1986, that sufficient funds are available to meet the Bureau's total capabilities for Fiscal Year 1986 for planning and construction on the Central Utah Project.

NOW, THEREFORE BE IT RESOLVED, that the Board of Directors of the Central Utah Water Conservancy District does hereby support the funds for the Central Utah Project as recommended by the President for Fiscal Year 1986 and requests the Congress of the United States to appropriate these funds.

BE IT FURTHER RESOLVED, that the Directors of the District do hereby request the U. S. Bureau of Reclamation expedite and coordinate its planning and construction program so that future funds can be requested and utilized to result in a more reasonable, economical and expeditious construction program for the Central Utah Project.

BE IT FURTHER RESOLVED, that copies of this resolution be submitted to Utah's Congressional Delegation, the Governor of the State of Utah, Secretary of the U. S. Department of Interior, U. S. Commissioner of Reclamtion, and other interested parties.

CERTIFICATE

I certify that the foregoing is a true and accurate copy of a resolution adopted by the Board of Directors of the Central Utah Water Conservancy District on February 22, 1985.

Lynn S. Ludlow
Secretary

RESOLUTION

WHEREAS, this District and the United States acting through the Bureau of Reclamation have been negotiating and have prepared several drafts of a proposed Supplemental Repayment Contract; and this Board has reviewed and is thus familiar with the current working draft which is dated February 22, 1985; and

WHEREAS, at the last public negotiation sessions proposal were advanced by this District which have not yet been incorporated into the working draft; and

WHEREAS, the parties have agreed on the additional authorization needed to cover the anticipated additional costs of Bonneville Unit M & I water;

NOW, THEREFORE BE IT RESOLVED; that this Board hereby authorizes and approves inclusion in the final draft of the Supplemental Repayment Contract an agreement by this District (subject to the other provision of the contract) to repay the reimburseable costs properly allocated under Federal Reclamation law to Bonneville Unit M & I water up to but not exceeding an additional $335,000,000; plus 10% for contingencies.

RESOLVED further, that this Board acknowledges that the 1965 Repayment Contract is to remain in effect and that under said contract this District has already agreed to pay such reimburseable M & I Costs up to but not exceeding $140,408,000 and this District has prepaid an additional $10,000,000; and that this $335,000,000 additional repayment authorization (when added to the $140,408,000 authorized in the said 1965 Contract and the $10,000,000 already prepaid) will obligate the District to pay said reimburseable costs up to but not exceeding a total of $485,408,000 for M & I water use;

RESOLVED, further that this Board acknowledges that this M & I water authorization will be in addition to the $16,400,000 irrigation water obligation which is to be paid by the irrigation water users;

RESOLVED, further that the Board requests that the Supplemental Repayment Contract now being finally drafted incorporate the district's suggestions made at the last public negotiation sessions and that it then be brought before the Board at its next Regular Meeting now scheduled for April 11, 1985, for further review, approval, and referred to the waters for their approval.

CERTIFICATE

I certify that the foregoing is a true and accurate copy of a resolution adopted by the Board of Directors of the Central Utah Water Conservancy District on March 14, 1985.

Lynn S. Ludlow
Secretary

NEW MEXICO WATER RESOURCE PROJECTS

STATEMENT OF S.E. REYNOLDS, SECRETARY, NEW MEXICO INTERSTATE STREAM COMMISSION

SUMMARY

This statement is submitted in support of appropriations for the construction of water resource projects authorized to be built by the Bureau of Reclamation and the Corps of Engineers, for operation and maintenance of projects constructed by these agencies and for project investigations by these agencies.

In general, I support the President's fiscal year (FY) 1986 budget proposals for water resources. However, the President's FY 1986 budget does not include funds for the Animas-La Plata Project, Colorado-New Mexico. I urge that at least $1.35 million be included in the FY 1986 budget to initiate construction activities on this project. The Bureau has initiated discussions with the local entities on repayment contracts and none of these discussions has been unfavorable. The project is in all respects ready for construction.

I also urge that at least $8.8 million in addition to the President's proposal be appropriated to the Department of the Interior and that at least $7.1 million be appropriated to the Department of Agriculture for the Colorado River Salinity Control and Water Quality Improvement Program to assure that salinity control efforts continue in a timely and effective manner.

In addition, I urge that the authorized Rio Grande Floodway-San Acacia to Bosque del Apache Project, New Mexico, for which the President's budget proposes no funds, be funded at the amount of the Corps of Engineers full capability. Further, I request that the President's FY 1986 budget proposal of $220,000 for the Corps survey, Pecos River and Tributaries, New Mexico, be continued at full Federal funding rather than the 50% Federal - 50% non-Federal cost sharing recommended by the Department of the Army.

STATEMENT

BUREAU OF RECLAMATION

Colorado River Storage Project and Participating Projects

The Colorado River Storage Project Act, which became law in 1956, authorized a carefully planned and farsighted program for the development and use of waters of the Upper Colorado River Basin. To carry this program forward the President has recommended that $103.137 million be appropriated to the Bureau of Reclamation for FY 1986. I support this recommendation.

The President's FY 1986 budget does not include funds for the Animas-La Plata Project, in Colorado and New Mexico which was authorized in 1968 by PL 90-537. The Bureau of Reclamation has, in consultation with the States of Colorado and New Mexico and the local entities who would be the immediate beneficiaries of the project, selected a plan to regulate and deliver water to the areas of use; all the work on the final environmental impact statement and the definite plan report has been completed. The Bureau has initiated discussions with the local entities on the terms of repayment contracts under which the local entities would

repay their allocated share of the construction costs and annual operation and maintenance costs. Those entities have indicated their intent to enter appropriate contracts. The project is in all respects ready for construction and there is a great need for the additional water supply which will be made available by the projects in this area of the states where oil, gas, uranium and coal development for energy is underway. I urge that at least $1.35 million be appropriated in FY 1986 to initiate fulfillment of the federal commitment made by PL 90-537 and to seize an opportunity to provide "wet" water for two Indian tribes to obviate litigation for "paper" water rights.

I also urge that appropriations for units of the Colorado River Storage Project and Participating Projects in the other Upper Basin states be adequate for orderly project development.

Brantley Dam and Reservoir

The President's FY 1986 budget includes $29.536 million for continued construction on the Brantley Dam and Reservoir Project, New Mexico. The basic purpose of the project is the protection of life and property in the vicinity of the City of Carlsbad. Brantley Dam will replace the unsafe McMillan Dam, which was reconstructed by the Reclamation Service in 1908, and will provide additional capacity for the storage of flood waters. I support the President's FY 1986 budget proposal for this project.

Velarde Community Ditch Project

The President's FY 1986 budget includes $3.4 million to continue construction for replacement of existing deteriorated diversion facilities and design work on canal structures. I support the FY 1986 budget proposal for this project.

Navajo Dam

The President's budget proposes $3.536 million for remedial grouting and drainage work for correction of seepage at Navajo Dam. This budget proposal is made pursuant to the Reclamation Safety of Dams Act Amendment (PL 98-404). I support the FY 1986 budget proposal for this work.

Central Arizona Project

The Colorado River Basin Project Act, PL 90-537, enacted in 1968, authorized construction of the Central Arizona Project in Arizona and New Mexico. The President's FY 1986 budget proposes $134.7 million to continue construction of this project. The Hooker Dam and Reservoir, or suitable alternative, in southwestern New Mexico is authorized for construction as a unit of the Central Arizona Project. The President's proposed budget includes $567,000 to continue Stage II studies on this unit. I support the President's budget proposal for funding the Central Arizona Project.

Colorado River Salinity Control Project, PL 93-320, Title I

The President's FY 1986 budget includes a total of $22 million for continued construction of the Yuma Desalting Plant and other salinity control facilities. I support the President's FY 1986 budget proposal for this program.

Colorado River Basin Salinity Control, PL 93-320, Title II and Colorado River Water Quality Improvement Program

The President's FY 1986 budget includes $5.362 million for construction of three salinity alleviation units authorized by

Title II of PL 93-320, Grand Valley, Paradox Valley and Las Vegas Wash Units, $1.2 million for advanced planning of two additional units that would improve water quality and $4.418 million for general investigations of other potential salinity control programs.

No funds are proposed for the Department of Agriculture's onfarm salinity control activities. In 1984, by PL 98-569, Congress enacted amendments to PL 93-320 that were proposed by the Colorado River Salinity Control Forum. The amendments authorized additional activities for the Departments of the Interior and Agriculture that are needed to meet the objectives of the legislation. In recognition of the proven cost effectiveness of Agriculture's onfarm management activities in controlling salinity, a separate Colorado River Basin onfarm management salinity control program was authorized for the Department of Agriculture.

The proposed level of funding in the President's budget seriously jeopardizes the continued progress and effectiveness of Colorado River salinity control efforts. The budget would not provide funds for initiation of construction of the brine injection well at the Paradox Valley Unit, would not permit start of construction on Stage II of the Grand Valley Unit, and would halt the cost-effective onfarm salinity control measures of the Department of Agriculture.

To assure that salinity control efforts move forward in a timely and effective manner, the President's budget should to be increased by at least $6.6 million for the Paradox Valley Unit, $2.2 million for the Grand Valley Unit and $7.1 million for Agriculture's onfarm program and associated technical assistance.

Closed Basin Division, San Luis Valley Project, Colorado

The President's FY 1986 budget includes $9.785 million for continued construction of the Closed Basin Division. Work will include installation of wells, furnishing and installing pumps and motors, construction of portions of the canal, lateral and transmission systems. The project will facilitate Colorado's delivery of water to the downstream states and Mexico. I support the President's proposed FY 1986 budget for this project.

General Investigations

The proposed Bureau program for FY 1986 includes several general investigations of interest to New Mexico: 1) $200,000 for the Alamogordo Water Supply Study; 2) $248,000 for Environmental and Interagency coordination activities; 3) $13,000 for minor work in connection with completed project investigations; 4) $30,000 for the Taos Community Ditch Evaluation; and 5) $116,000 to provide technical assistance to aid the State in water resource planning. I support the President's proposal that a total of $607,000 be included in the FY 1986 budget for these general investigations.

Operation and Maintenance Program

I support the President's FY 1986 budget for operation and maintenance of the following Bureau projects in New Mexico and in adjacent states in which New Mexico has an interest: 1) Carlsbad Project, $53,000; 2) Pecos River Basin Water Salvage, $245,000; 3) Rio Grande Project, $2,240,000; 4) Middle Rio Grande Project, $8,258,000; 5) San Juan-Chama Project, $700,000; 6) San Luis Valley Project, $438,000; 7) Soil and Moisture Conservation Programs in New Mexico, $417,000; a total of $12,351,000.

CORPS OF ENGINEERS

Construction

The President's FY 1986 budget includes $1.0 million to modify Jemez Canyon Dam to preclude overtopping of the dam by the revised probable maximum flood developed pursuant to the Dam Safety Assurance Program. I support the President's proposed FY 1986 budget for this project.

Surveys

The President's FY 1986 budget includes $225,000 to continue the Corps of Engineers' survey, Gila River and Tributaries Upstream from Camelsback Dam Site, Arizona and New Mexico. The survey is to investigate the feasibility of providing solutions to the many flood problems in the area. During 1984 another severe flood occurred on the San Francisco and Gila Rivers in New Mexico and Arizona causing extensive flood damage. I support the President's budget proposal for this survey.

The President's FY 1986 budget includes $450,000 to continue the Corps of Engineers' survey, Rio Grande and Tributaries, Colorado and New Mexico, directed at determining improvements to solve flood problems in the Rio Grande Basin above El Paso, Texas. I support the President's budget for this survey.

The President's FY 1986 budget includes $450,000 for the Corps of Engineers' survey, Rio Grande and Tributaries, Bernalillo to Belen, New Mexico. The work proposed is continuation of preparation of a general design memorandum on reconstruction of the levees along the Rio Grande to provide additional flood protection to the adjacent lands which are changing from rural agricultural to urban use. I support the President's budget proposal for this survey.

The President's FY 1986 budget includes $220,000 to continue the Corps of Engineers' survey, Pecos River and Tributaries, New Mexico, which was initiated in FY 1985. The survey is directed at evaluation and solution of flood problems at Roswell and Carlsbad, New Mexico. I request that this survey be continued at full Federal funding rather than the 50% Federal-50% non-Federal cost-sharing recommended by the Department of the Army.

The President's FY 1986 budget does not include funding for the authorized Rio Grande Floodway-San Acacia to Bosque del Apache Project, New Mexico. I recommend that this project be reactivated and pursued in lieu of the studied alternate Rio Puerco-Rio Salado Project. Because of U.S. Fish and Wildlife Service concerns over a proposed flood control structure on Rio Salado, the proposed alternate project cannot be implemented and the area downstream of San Acacia remains susceptible to flood damage. I recommend that funding be provided in the amount of the Corps full capability for the Rio Grande Floodway-San Acacia to Bosque del Apache Project.

The President's budget proposes $260,000 for continuation of planning and engineering for the proposed flood control project, Puerco River at Gallup, New Mexico. I support the President's proposed budget for this project.

Operation and Maintenance Program

I support the President's FY 1986 budget for appropriations for operation and maintenance of Corps of Engineers' projects in New Mexico. These include: 1) Abiquiu Dam, $662,000; 2) Cochiti Dam, $1,033,000; 3) Conchas Dam, $823,000; 4) Galisteo Dam, $118,000; 5) Jemez Canyon Dam, $209,000; 6) Santa Rosa Dam, $451,000; and 7) Two Rivers Dam, $375,000; a total of $3,671,000.

The opportunity to present this statement in support of appropriations for the work of these agencies is sincerely appreciated.

Letter From Elaina Blake, President, Greater Las Vegas Chamber of Commerce

April 4, 1985

Honorable Mark O. Hatfield
Subcommittee on Energy and Water Development
Senate Committee on Appropriations
Room 1322, Dirksen Senate Office Building
Washington, D.C. 20510

Dear Senator Hatfield:

The Greater Las Vegas Chamber of Commerce has and continues to be alert to the needs for an adequate municipal and industrial water supply to the Las Vegas Valley and Boulder City areas to Southern Nevada. We have been advised that the Fiscal Year 1985 Executive Budget includes $350,000 under "Drainage and Minor Construction" for completion of the construction phase of the Second Stage of the Robert B. Griffith Water Project. We urge your support of this Fiscal Year 1986 appropriation.

The Greater Las Vegas Chamber of Commerce considers this water supply project to be vital to the economic, social and environmental well being of the current and future residents of Southern Nevada.

We request that this letter be made a part of the public hearing record. Your consideration in this matter will be sincerely appreciated.

Sincerely,

Elaina Blake
President

/amw

cc: Rep. Harry Reid
Rep. Barbara Vucanovich

OPPOSITION—CENTRAL ARIZONA PROJECT

LETTER FROM FRANK WELSH, P.E. J.D., EXECUTIVE DIRECTOR, CITIZENS CONCERNED ABOUT THE PROJECT

April 1985

STATEMENT OF
CCAP EXECUTIVE DIRECTOR FRANK WELSH P.E. J.D.
before
U.S. SENATE APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Mr. Chairman and members of the Subcommittee, we appreciate the opportunity to present testimony showing why we believe this year's appropriation for the Central Arizona Project (CAP) should be greatly reduced or eliminated altogether.

Attached as part of this testimony are selected pages on the CAP from my newly published book "How To Create A Water Crisis." Also attached is the publisher's summary and a critique of the book from The Arizona Republic by J.J. Casserly, Editorial Writer.

In our 1982 testimony, we pointed out that Arizona cities have adequate water supplies available to them for at least the next century if the State upgrades its local laws and policies. As J.J. Casserly notes in his column:

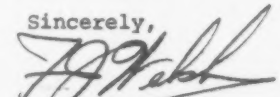
> Welsh is right in arguing Arizona must make major reforms and not look to Washington or elsewhere for its water future.

The groundwater overdraft in central Arizona, the espoused reason for the CAP, amounts to less than 2 million acre feet (maf) a year. The Arizona State Water Plan shows more than 600 maf in storage under central Arizona. Thus there is no real need for the CAP for centuries, especially since 3/4ths of the crops grown in central Arizona are the surplus types we have been paying farmers not to grow. This is particularly relevant since fully 89% of Arizona's water is consumed by agriculture.

In light of the huge federal deficit substantial reductions in CAP funding are certainly warranted. As former Secretary of the Interior Stewart L. Udall stated in the foreword to my book:

> If you are concerned about how your tax money is being spent, you need to know the facts which surround the water crisis.

Sincerely,



Frank Welsh, P.E. J.D.
Executive Director

HOW TO CREATE A WATER CRISIS

BY FRANK WELSH

The West's water problem is not the lack of a natural resource, but a surplus of bureaucracy and special-interest politics.

"Welsh's analysis of water and federal water projects should reach a national audience."

From the Foreword
by Stewart Udall,
former Interior Secretary

$16.95 cloth, $9.95 paper

Johnson Books
1880 S. 57th Ct., Boulder, Colo. 80301

The water crisis is not what it appears to be. The West has adequate water for its cities and projected urban growth into the next century. The problem is not the lack of a natural resource but a surplus of bureaucracy and special-interest politics.

Most of the water in the West is consumed by irrigated agriculture, and the water is subsidized by taxpayers' money. Is this agriculture necessary when farmers are being paid, also with taxpayers money, not to grow crops? Should tax dollars be used to build massive water projects to bring cheap water to farmers growing surplus and water-wasting crops while cities pay more and more for their supplies?

The answers to these questions are obvious and disturbing. Frank Welsh takes on the Bureau of Reclamation, the Army Corps of Engineers, and agribusiness to bring the light of reason to the murky world of water politics. The issues are enormous, involving billions of dollars of taxpayers' money, irreparable environmental damage, the destruction of an Indian reservation, and rampant injustice to people caught between the wheels of big-money politics. *How To Create A Water Crisis* is a shocking book and will be indispensable in future discussions of the major problem facing the West today.

Frank Welsh, a professional civil engineer with a doctorate in law, is an internationally recognized authority on water resource analysis. He has been a consultant to the Audubon Society and is the executive director of a citizen taxpayer group opposed to the Central Arizona Project.

[From the Arizona Republican, Thursday, Feb. 21, 1985]

IRISH LEPRECHAUN FIRES BROADSIDE AT ARIZONA WATER PROJECTS

By J.J. Casserly, editorial writer

Frank Welsh, the Irish leprechaun of the Arizona water scene, is twitting The Establishment again.

His new book, *How to Create a Water Crisis*, seems sure to generate a storm of controversy.

The Phoenix engineer and longtime critic of the Central Arizona Project has fired a broadside of criticism at political and water officials, the Salt River Project and many others.

The book, published by Johnson Books, Boulder, Colo., at $16.95, is a detailed indictment of the CAP and much of the state's water history.

The work may well attain national prominence because of its profound financial, environmental and water-policy implications.

Welsh is a fiscal conservative. Much of what he writes will appeal to taxpayers not only because of massive federal deficits, but continuing big U.S. water subsidies.

His central thrust is that water problems of Arizona and other Western states have been caused mostly by legal and political systems, not the arid desert.

The book argues that laws and water practices have distorted competition and the free-enterprise system. And neither functions in relation to water.

Welsh makes many provocative observations based on documented research and attribution. The most prominent is a theoretical conclusion that Arizona already has enough surface and groundwater to meet its needs for centuries.

In essence, he claims, neither the CAP nor the Plan 6 alternative to Orme Dam was ever needed. And the billions of federal and local dollars being spent on these projects are a vast waste.

Welsh's case — good in theory — is poor history and does not represent water realities.

The laws and rules that Welsh attacks represent decades of legislative trade-offs in Congress that are the essence of the democratic process. And the reasons were good.

The first-in-time, first-in-right doctrine has been the basis of Western water law, and with good reason.

Agriculture has been the fount of such law, not as in the East where proximity to water was crucial.

Indeed, agriculture has raised Arizona and other Intermountain states to where they are today.

The endless web of court decisions on water, agreements among Western states, Indian water rights and individual pacts are the reasons for the construction of the CAP and the building of Plan 6.

Welsh would banish such history as economic folly, but it cannot be wistfully washed away.

However, the book serves a very useful purpose because Welsh has some penetrating insights. He rightly cites the four most crucial factors in solidifying the state's water future.

✔ Conservation, including raising water costs, widespread desert landscaping and covering canals to prevent evaporation that could save vast amounts of water.

✔ The progressive demise of agriculture — it uses 89 percent of the state's water but adds relatively little to the economy. This says nothing of its triple subsidies — water subsidies to grow surplus crops that are further subsidized in set-aside programs.

✔ Recycling of great amounts of wastewater.

✔ Transferring Salt River Project water outside its boundaries, which it now refuses to do. SRP is able to get away with this because it is an unregulated monopoly controlled by a farm-oriented board. However, the board will be revamped since SRP will be fully urbanized by the turn of the century.

Welsh is right in arguing Arizona must make major public policy reforms and not look to Washington or elsewhere for its water future.

One need not completely agree with Welsh to admire his audacity.

It's only in the heat of such books that a better future will be forged.

10. More Water at Any Price?

The Central Arizona Project is not needed to support human life since, as we have seen, the water already available to central Arizona is more than adequate. And the project is hardly an economic necessity. A large portion of its water would presumably go to Arizona agriculture, which consumes 89% of Arizona's present water supply but contributes only 2% to the state's personal income. What is this superfluous project and how did it come to be?

Soon after Arizona became a state in 1912, residents began promoting a plan to bring Colorado River water to central Arizona. In 1921 the chief engineer for the federal Reclamation Service called the concept a "Mad Man's Dream," but by 1947 that same agency, which had by then changed its name to the U.S. Bureau of Reclamation, completed a feasibility report which stated:

> Unless additional irrigation water is made available to the project area, the equivalent of a 30% reduction in the presently cultivated lands in the area must eventually be effected. The Central Arizona Project is needed to sustain the agricultural economy of the area.

At that time Arizona farmed around 800,000 acres. Since 1951 the state's acreage has exceeded 1.1 million — an increase of more than 30%. In 1981 it exceeded 1.35 million acres.

With the solid support of every Arizona politician, the project was finally authorized in 1968. It consisted of 300 miles of aqueduct, 547,000 kilowatts of energy from the the CAP at that time has since more than doubled.

Dr. Power also observed that the "CAP will cost Arizonans a terrific amount of money." His study shows that it will cost the state $1.4 billion in 1977 dollars. This is more than the entire state budget for that year. In 1980 dollars, it will cost more than $70 million a year just to operate the CAP. Arizonans will repay the CAP through increased property taxes and increased water rates.

In Arizona the unit of water measurement is the acre foot (af), which appears to be a uniquely Western concept, used to deal with large quantities of water. It is equal to 325,851 gallons. In 1980 the Salt River Project delivered water to the land in the Phoenix area for less than $7/acre foot. An acre is roughly equivalent in size to a football field, so an acre foot would cover that field with water one foot deep. A foot of dirt over the same area would cost more than $4,000, so water in the Phoenix area is not just "dirt cheap"—it is cheaper than dirt. The reason, of course, is that this water is highly subsidized. Even in its lowest value uses, it is worth twice its price. Numerous studies have calculated that the actual value of "new" water is around $15/af.

In its 1974 CAP report, Tucson noted that it was paying $20/af to pump groundwater and that CAP water would cost the city $135/af. In its 1977 review of the CAP, the U.S. Department of Interior confirmed the Tucson analysis when it noted that it would cost the U.S. Government $141/af to provide CAP water. Why would Arizona and the U.S. want to pay such an exorbitant amount for water when ample supplies are already available at a fraction of the cost? Perhaps Congress believes that in some way the benefits of the CAP justify the expenditures, but this is not true.

Before Congress authorizes a water project, it generally requires that the benefits produced will at least equal the cost of building. The Bureau of Reclamation's economic analysis of the CAP showed it would return $1.60 in benefits for each dollar invested. However, the bureau's parent agency, the Department of the Interior, severely criticized the bureau's economic analysis when it reviewed the CAP in 1977, and concluded that the CAP would return only 93 cents in benefits for each dollar invested at the 3.25% discount rate which was in effect when the project was authorized in 1968. Dr. Power provides a simplified explanation of the discount rate:

> No one would pay a dollar today for an offer of a dollar 50 years from now. They would have to be offered a sum of money quite a bit larger than one dollar before they would agree to give up control and use of a dollar for fifty years. The discount rate is used to make this adjustment, to establish the equivalency between benefits in the future and their present worth.
> The discount rate is *not* just an interest rate. It is a measure of what productive uses of resources in the private economy are lost as a result of the federal government taking the resources needed for CAP from private individuals and employing these resources in Arizona.

Since it seems unlikely that we will see 3.25% money again, the Interior Department analyzed the CAP at the 6.375% rate used in 1977 and found that with this figure there would be a return of only 58 cents in benefits for each dollar invested. It added that this "may still be overestimated in some respects."

Dr. Power's 1978 study found that the discount rate really averaged more than 11% but analyzed the CAP at the then "official government" rate of 7%. He concluded that at this latter rate, less than 35 cents in benefits would be realized on each dollar invested. The results of Dr. Power's analysis are shown in the appendix. In comparison Dr. Power also analyzed the bureau's Garrison Diversion Project in North Dakota and found its benefit-cost ration was less than one. His review of the bureau's O'Neil Project in Nebraska refers to an analysis by University of Nebraska agricultural economists, which estimated the benefit-cost ratio at 0.1 to 1. Dr. Power added: "This implies mere cents returned on each dollar invested."

In his review of the Oahe Unit in South Dakota, Dr. Power referred to a 1960 study which surveyed 43 existing irrigation projects and found that in only one-fourth of them did the benefits outweigh the costs. This knowledge was then applied to 30 proposed projects, and only one was found to have benefits in excess of costs. In summation, Dr. Power then observed: "That's the reason the Bureau of Reclamation doesn't in general use the results of actual irrigation projects to produce the projections of what the benefits are going to be on new irrigation projects."

Again ignoring reality, the Bureau of Reclamation concluded that the value of CAP water to municipal and industrial (M&I) users was $200 an acre foot. This certainly is suspect, especially when water in the Phoenix area at that time was being sold for less than $7/af. How did the bureau arrive at a value for new CAP water that was almost 30 times the price of existing supplies, which are more than adequate for projected M&I growth? The bureau simply "assumed" that central Arizona cities would build their own CAP. Dr. Power in his 1978 study explains the meaning of this assumption:

> Since the privately built unit would not be able to get capital from the government at a subsidized 3.25 percent but would have to borrow the money at market rates . . . the costs . . . are guaranteed to be higher. Thus no matter what the rationality of the M&I portion, no matter whether the water is needed or not, a higher positive benefit can be calculated by the BR.

The bureau's economic analysis also exaggerated agricultural benefits. It took as benefits the income that would be produced by using CAP water on new farms with the typical mix of cotton, grain, vegetables, etc. This is irrational because the CAP law specifically prohibits irrigating new farms. Also, classic economic theory would hold that CAP water would be used to grow low value crops, like alfalfa. Otherwise farms growing alfalfa with present supplies would instead be growing more valuable crops. While we have seen the value of additional water is only $15/af, the bureau managed to inflate the value of agricultural CAP water to $100/af. Since this is more than the cost of pumping ground-

water, there would be no benefits to farms that rely on that source.

The Department of the Interior summarized its criticism of the bureau's economic analysis as follows:

> These problems reflect a general failure on the part of the Bureau of Reclamation in its benefit-cost analysis for the Central Arizona Project to make a serious attempt to determine what would happen in central Arizona without the Central Arizona Project and then to compare this with what would happen if the Central Arizona Project is built.

We have already determined what would happen in central Arizona without the CAP. There is ample renewable water for cities and industries and enough groundwater to permit most farms to remain in business for well over a century. Of course, the depths to groundwater would continue to increase. The benefits from CAP water could be calculated as the difference between the cost of pumping groundwater and the cost of CAP water. The Department of the Interior concluded that the depth to groundwater would have to exceed 1000 feet to justify the cost of CAP water. They added that the present depth to groundwater generally ranges from 300 to 500 feet.

Simple logic could be substituted for all this economic analysis. The energy required to pump water *up* from underground is same as pumping water *uphill* from the Colorado River. CAP water will be pumped uphill 1200 feet to Phoenix and another 900 feet to Tucson. Therefore the groundwater depths would have to exceed 1200 feet to justify pumping CAP water uphill to Phoenix and exceed 2100 feet to pump to Tucson. Then the cost of building the CAP would have to be added.

The CAP will consume 547,000 kilowatts of energy to lift water uphill into central Arizona. As hard as it is to believe, the bureau used this consumption of precious energy as a benefit! Again quoting Dr. Power:

> This magic which transforms a major electric cost into a major electric benefit is possible because lumped in with CAP is an electric generating facility which already exists and which has nothing to do with the CAP.

This energy is provided by the Navajo Power plant which produces $2.25 in benefits for each dollar invested. Including the power plant with CAP was simply a ploy to make CAP look better. It has no economic logic, as Dr. Power points out.

> Diverting the funds of the Navajo plant to CAP is no different than diverting tax revenues to CAP. Both remove monies from the federal treasury. Yet, hopefully, no one would claim federal tax revenues as a benefit of CAP.

LETTER FROM MRS. CAROLINE BUTLER, SCOTTSDALE, ARIZ.

April 1985

Sen. Mark O. Hatfield,
Chairman, Appropriations
Energy and Water Subcommittee
U. S. SENATE
Washington, D.C. 20510

Re: Central Arizona Project

Dear Sir:

This is to object to further appropriations for the Central Arizona Project. Please include this as part of the record. Thank you.

The costly Central Arizona Project has been promoted on the story that Arizona is short on water but in fact, Arizona's water director says that without agriculture Arizona could support a population of over 20 million. Arizona today has 3 million residents.

However, here in Arizona, agriculture uses 89% of the state's water but contributes only 1% to Arizona's personal income. (Supporting documentation is attached.) Not only that but Arizona was the highest in U.S. per-farm 1982 subsidies. (Attached.)

As a fix for Arizona's "water shortage," Congress keeps funding an energy-consuming design making a river run backwards uphill for 370 miles, the multi-billion-dollar Central Arizona Project.

This suggests economic insanity or complete incompetence in Arizona and I don't see why the working men and women of our country should have their money used for poor decisions by Arizona. Stopping the Central Arizona Project will also save Arizonans a shocking $70 million annual operation and maintenance cost in the future.

Thank you for the opportunity to comment on appropriations of our tax dollars.

Sincerely,

Carolina Butler

Mrs. Carolina Butler

2-23-82
Bruce J. Friedhoff
2 Mar 82
(255-1566)

Water Supply

1. What is Arizona's total dependable supply of water?
   2,800,000 a.f.

2. Break down that figure:
   Source: Phase I - Inventory of Resources and Uses, July 1975
   0 a.f. dependable groundwater supply (Pumpage Exceeds Recharge)
   2,800,000 a.f. surface water

3. Where does the surface water figure come from? (river, etc.)
   883,100 a.f. Salt & Verde Rivers
   193,200 a.f. Gila River - Ashurst Hayden Dam
   31,500 a.f. Agua Fria River
   96,600 a.f. Gila River - Safford Valley
   19,470 a.f. Gila River - Duncan Valley
   1,600,000 a.f. Central Arizona Project - Colo. R.

Water Use

1. What is Arizona's total water ~~consumption~~ depletion?
   (Consumptive use + evapotranspiration losses)
   4,814,000 a.f.

2. How much of that is used by agriculture?
   4,294,000 a.f. 89%

3. How much of that is used by municipalities?
   329,000 a.f.

4. How much of that is used by industries?
   151,000 a.f.

5. Other? Fish & Wildlife (what is other)
   40 a.f.

Colorado River

1. How much of the Colorado River is Arizona entitled to?
   2,800,000 a.f.

2. How much of that is Arizona using today? Along Colorado River mainstream.
   1,200,000 a.f.

Phoenix and Tucson

1. How much water does each person use (gpppd)?
   Phoenix 210 gpppd Tucson 150 gpppd
2. Does that figure include drinking, washing and lawn water? Yes and commercial and industrial uses supplied by water distribution system

To calculate how many people a certain amount of water will support, multiply the number of acre-feet by 5.

1 a.f. of water will support a family of five for one year (178½ gals. of water per person per day).

National average is 150 gpppd.

325,851 gals. = 1 a.f. (1 acre-foot is amount of water needed to cover one acre one foot deep)

Income by Industrial Source, 1982

State and region	SOURCES OF PERSONAL INCOME					SOURCES OF LABOUR AND PROPRIETORS' INCOME % OF TOTAL EARNINGS										
	Total personal income[1]	Farm income	Private nonfarm income	Government income		Total earnings[2]	Farms	Mining	Construction	Mfg.	Wholesale, retail trade	Finance, insurance, real estate	Transportation, communications, public util.	Service	Govt.	Other
				Federal	State, local											
United States	$2,571,592	$33,474	$1,483,890	$102,879	$206,467	$1,826,710	%1.8	%2.0	%5.3	%24.4	%16.3	%6.2	%7.9	%18.7	%16.9	%0.4
New England	148,368	477	89,816	3,868	10,254	104,416	0.5	0.1	4.5	31.3	15.4	7.0	6.1	21.2	13.5	0.4
Connecticut	[illegible]51	116	26,887	802	2,533	30,338	0.4	0.2	4.5	35.5	15.2	8.7	5.6	18.7	11.0	0.3
Maine	10[illegible]9	56	5,589	608	798	7,052	0.8	0.1	5.0	29.3	15.5	4.3	6.3	17.8	20.0	1.0
Massachusetts	69,8[illegible]	134	42,941	1,707	5,098	49,881	0.3	0.1	3.9	28.9	15.5	6.9	6.5	23.9	13.6	0.4
New Hampshire	10,202	26	5,959	249	639	6,872	0.4	0.1	8.1	32.8	16.2	5.3	5.7	18.2	12.9	0.3
Rhode Island	10,278	10	5,691	386	790	6,876	0.1	0.1	4.0	31.3	15.1	5.9	5.0	20.9	17.1	0.5
Vermont	4,907	135	2,749	117	396	3,396	4.0	0.4	5.4	30.2	15.0	4.5	6.1	18.9	15.1	0.5
Mideast	513,248	1,944	299,393	21,551	41,570	364,458	0.5	0.5	4.2	23.9	15.3	7.9	8.3	21.6	17.3	0.3
Delaware	7,065	116	4,622	227	582	5,547	2.1	[3]	[3]	38.5	12.9	4.6	5.6	15.1	14.6	[3]
District of Columbia	9,186	—	7,874	6,449	1,089	15,412	—	[3]	[3]	2.6	5.9	4.8	5.6	29.6	48.9	[3]
Maryland	52,195	323	24,510	4,396	4,263	33,493	1.0	0.2	5.8	15.3	17.0	5.6	7.1	21.9	25.9	0.6
New Jersey	97,361	209	54,283	2,434	7,199	64,124	0.3	0.1	4.4	27.8	17.3	5.4	9.1	20.2	15.0	0.3
New York	217,457	543	131,635	4,376	19,854	156,408	0.3	0.2	3.6	21.7	15.4	11.3	8.9	22.8	15.5	0.3
Pennsylvania	129,985	753	76,470	3,670	8,583	89,475	0.8	1.7	4.8	31.1	14.9	5.4	7.8	19.5	13.7	0.2
Great Lakes	459,698	4,888	275,347	9,342	35,440	325,018	1.5	0.8	4.4	33.7	15.7	5.5	7.2	17.1	13.8	0.2
Illinois	138,519	1,434	81,740	3,214	10,195	96,583	1.5	1.1	4.8	26.6	17.4	7.7	8.2	18.6	13.9	0.2
Indiana	54,819	550	33,688	1,187	3,905	39,329	1.4	0.9	5.1	38.1	14.9	4.6	7.4	14.3	12.9	0.2
Michigan	99,802	749	60,075	1,599	8,660	71,082	1.1	0.5	3.7	38.3	14.4	4.3	6.0	17.1	14.4	0.2
Ohio	115,217	667	70,274	2,587	8,310	81,838	0.8	1.2	4.4	35.6	15.6	4.7	7.1	17.1	13.3	0.2
Wisconsin	51,341	1,488	29,571	755	4,370	36,185	4.1	0.1	4.0	34.2	15.3	5.1	6.5	16.2	14.2	0.3
Plains	187,104	7,021	103,487	5,643	15,045	131,196	5.4	1.2	5.2	22.5	17.8	5.8	9.0	17.0	15.8	0.3
Iowa	31,347	1,652	15,923	482	2,582	20,639	8.0	0.2	5.0	25.1	17.8	5.9	7.2	15.7	14.8	0.4
Kansas	28,325	1,186	14,494	1,062	2,156	18,898	6.3	3.1	5.3	21.1	16.8	5.3	9.2	15.7	17.0	0.3
Minnesota	46,184	1,464	27,473	810	4,104	33,851	4.3	1.0	4.9	25.3	18.0	6.1	7.9	17.6	14.5	0.3
Missouri	50,346	486	30,711	1,915	3,545	36,657	1.3	0.6	5.2	25.2	17.9	5.8	10.5	18.5	14.9	0.3
Nebraska	16,939	963	8,595	651	1,560	11,769	8.2	0.4	4.8	15.5	18.1	6.9	10.8	16.0	18.8	0.4
North Dakota	7,287	549	3,558	387	581	5,075	10.8	5.8	8.2	5.8	18.8	4.6	10.3	16.3	19.1	0.4
South Dakota	6,675	720	2,732	337	516	4,306	16.7	1.4	4.4	10.7	17.6	5.0	7.7	16.2	19.8	0.4
Southeast	520,232	7,910	284,861	28,618	42,105	363,494	2.2	2.6	5.9	22.5	16.5	5.2	8.3	16.8	19.5	0.5
Alabama	34,101	617	18,327	2,205	2,905	24,054	2.6	2.2	5.1	26.7	14.8	4.5	7.9	14.7	21.2	0.4
Arkansas	19,430	774	10,181	649	1,455	13,059	5.9	1.3	5.2	26.5	16.1	4.7	8.5	15.2	16.1	0.5
Florida	114,347	1,302	56,383	4,067	8,040	69,791	1.9	0.4	7.5	13.4	19.5	7.4	8.8	22.9	17.3	0.9
Georgia	54,035	777	32,479	3,209	4,711	41,175	1.9	0.4	5.2	22.4	19.1	5.7	10.3	15.5	19.2	0.3
Kentucky	32,762	1,065	18,047	1,513	2,446	23,071	4.6	7.9	5.1	24.0	14.6	4.1	7.8	14.4	17.2	0.4
Louisiana	44,633	376	27,289	1,302	4,049	33,016	1.1	9.4	9.1	16.2	16.2	4.6	10.1	16.8	16.2	0.4
Mississippi	19,840	515	10,499	1,017	1,768	13,799	3.7	2.5	6.4	25.3	15.4	4.4	7.4	14.1	20.2	0.5
North Carolina	54,431	1,331	32,169	2,664	4,811	40,974	3.2	0.2	4.6	32.3	15.6	4.3	7.2	13.8	18.2	0.3
South Carolina	27,231	282	15,349	1,967	2,518	20,115	1.4	0.2	5.9	32.1	14.0	4.4	6.8	12.7	22.3	0.4
Tennessee	41,420	570	24,659	1,900	3,248	30,377	1.9	0.8	4.9	29.2	16.8	5.0	7.3	17.1	16.9	0.2

Virginia	60,923	306	29,517	7,747	4,651	42,220	0.7	1.7	4.8	19.0	14.6	4.6	7.5	17.5	29.4	0.3
West Virginia	17,078	–5	9,962	379	1,504	11,840	[4]	18.1	4.6	21.0	13.9	3.2	9.3	13.8	15.9	0.2
Southwest	252,206	2,610	153,132	10,455	19,812	186,009	1.4	8.1	7.4	18.3	18.0	5.6	8.0	16.5	16.3	0.4
Arizona	29,100	345	15,610	1,298	2,648	19,900	1.7	2.8	7.4	18.4	17.0	6.1	7.0	19.1	19.8	0.7
New Mexico	12,492	189	6,413	951	1,520	9,073	2.1	8.9	7.3	7.2	15.2	4.1	9.0	18.6	27.2	0.3
Oklahoma	36,119	705	20,333	1,701	2,800	25,540	2.8	13.3	5.4	16.6	16.7	4.9	7.9	14.6	17.6	0.3
Texas	174,493	1,371	110,776	6,505	12,843	131,496	1.0	7.8	7.8	19.3	18.5	5.8	8.1	16.4	14.7	0.4
Rocky Mountain	73,837	1,264	42,711	3,892	6,549	54,416	2.3	7.0	7.1	15.2	16.8	5.5	9.2	17.2	19.2	0.4
Colorado	37,453	461	22,671	1,983	3,133	28,248	1.6	5.9	6.8	16.8	17.1	6.5	8.6	18.3	18.1	0.4
Idaho	8,716	458	4,372	367	749	5,947	7.7	1.8	6.9	17.1	16.7	4.6	8.1	17.4	18.8	0.8
Montana	7,673	217	3,825	370	740	5,152	4.2	5.6	7.1	9.0	18.3	4.9	12.0	16.2	21.5	0.5
Utah	13,788	101	8,043	946	1,275	10,366	1.0	5.8	6.4	17.8	16.3	4.9	9.3	16.8	21.4	0.2
Wyoming	6,207	27	3,800	225	651	4,704	0.6	24.2	11.1	4.7	14.5	3.3	10.8	11.8	18.6	0.3
Far West[5]	397,703	7,104	225,411	16,798	33,570	282,882	2.5	0.7	5.2	22.1	16.4	6.3	7.4	20.8	17.8	0.7
California	310,704	5,390	177,731	12,911	25,685	221,716	2.4	0.8	5.0	22.4	16.3	6.5	7.3	21.2	17.4	0.7
Nevada	10,552	52	6,390	427	921	7,790	0.7	2.1	7.4	5.3	14.4	4.5	8.4	39.7	17.3	0.3
Oregon	27,373	526	15,014	804	2,611	18,955	2.8	0.2	4.7	23.6	18.5	5.7	8.4	17.4	18.0	0.7
Washington	49,074	1,137	26,276	2,655	4,353	34,421	3.3	0.2	6.3	23.4	16.6	5.5	7.4	16.0	20.4	0.9
Alaska	7,118	4	4,317	863	1,102	6,286	0.1	7.9	13.3	5.5	11.9	3.2	12.0	14.2	31.3	0.7
Hawaii	11,579	252	5,415	1,848	1,021	8,536	3.0	[4]	5.7	5.0	15.6	6.5	9.3	20.9	33.6	0.4

Dollar figures in millions. Percentages may not add to 100.0 because of rounding.
[1] Includes dividends, interest, rent, and transfer payments. [2] Excludes dividends, interest, rent, and transfer payments. [3] Figures not available. [4] Less than 0.05%.
[5] Totals for Far West do not include Alaska and Hawaii.
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*.

Farms and Farm income

State	Number of farms 1983 [1,2]	Land in farms 1983 in 000 acres [1,2]	CASH RECEIPTS, 1982, IN $000 — Farm marketings — Total [2]	Crops [2]	Livestock and products
Alabama	54,000	12,100	2,212,073	994,658	1,217,415
Alaska	450	1,540 [4]	16,489	10,081	6,408
Arizona	7,000	38,900	1,576,128	893,707	682,421
Arkansas	56,000	16,200	3,147,480	1,521,708	1,625,772
California	78,000	33,700	14,069,097	9,688,375	4,380,722
Colorado	25,300	35,700	2,887,325	876,356	2,010,969
Connecticut	4,500	500	309,092	116,920	192,172
Delaware	3,400	650	404,101	116,897	287,204
Florida	41,000	12,800	4,246,680	3,304,344	942,336
Georgia	55,000	15,000	3,156,082	1,496,177	1,659,905
Hawaii	4,400	1,960	484,136	406,277	77,859
Idaho	24,400	15,100	2,027,500	1,213,682	813,818
Illinois	101,000	28,700	6,844,605	4,472,111	2,372,494
Indiana	87,000	16,800	4,315,514	2,552,377	1,763,137
Iowa	115,000	33,700	9,385,444	3,372,376	6,013,068
Kansas	75,000	48,500	5,182,945	1,859,005	3,323,940
Kentucky	103,000	14,500	2,883,553	1,610,058	1,273,495
Louisiana	36,500	10,100	1,724,448	1,218,091	506,357
Maine	8,100	1,560	408,214	159,223	248,991
Maryland	18,000	2,700	1,059,219	344,617	714,602
Massachusetts	5,300	600	341,076	206,150	134,926
Michigan	65,000	11,500	2,713,467	1,538,429	1,175,038
Minnesota	103,000	30,400	6,035,501	2,494,837	3,540,614
Mississippi	51,000	14,300	2,232,802	1,289,640	943,162
Missouri	117,000	31,400	3,489,729	1,434,236	2,055,493
Montana	24,000	62,100	1,476,228	823,614	652,614
Nebraska	63,000	47,600	6,099,567	1,868,161	4,231,406
Nevada	2,700	8,900	234,644	68,504	166,140
New Hampshire	3,200	540	104,047	29,001	75,046
New Jersey	9,500	1,030	515,215	388,775	126,440
New Mexico	13,500	47,000	922,489	295,341	627,148
New York	50,000	9,500	2,564,416	697,121	1,867,295
North Carolina	85,000	10,800	4,076,310	2,483,661	1,592,649
North Dakota	37,500	41,700	2,221,687	1,617,163	604,524
Ohio	92,000	16,100	3,520,796	1,969,493	1,551,303
Oklahoma	71,000	34,000	2,869,415	778,401	2,091,014
Oregon	37,000	18,200	1,746,050	1,094,207	651,843
Pennsylvania	59,000	8,700	2,985,826	820,262	2,165,564
Rhode Island	800	80	32,688	18,678	14,010
South Carolina	31,000	5,900	1,129,709	734,770	394,939
South Dakota	36,500	44,500	2,380,247	744,514	1,635,733
Tennessee	95,000	13,400	2,058,188	1,172,937	885,251
Texas	184,000	138,300	8,763,153	3,332,441	5,430,712
Utah	12,800	12,300	539,285	127,786	411,499
Vermont	7,500	1,700	407,505	33,684	373,821
Virginia	58,000	9,800	1,672,182	666,753	1,005,429
Washington	38,000	16,300	2,865,594	1,872,493	993,101
West Virginia	21,200	4,300	224,579	54,122	170,457
Wisconsin	90,000	18,200	5,105,804	1,002,052	4,103,752
Wyoming	9,200	35,300	527,273	112,722	414,551
TOTAL U.S.	2,369,750	1,035,160	136,195,597	65,997,038	70,198,559

[1] Preliminary. [2] Places with annual sales of agricultural products of $1,000 or more. [3] Excludes Commodity Credit Corporation loans.
[4] Exclusive of grazing land leased from the U.S. Government, Alaska farmland totals about 70,000 acres.
Sources: U.S. Department of Agriculture, Statistical Reporting Service, *Crop Production*, and Economic Research Service, *Economic Indicators of the Farm Sector*.

[From the Arizona Daily Star, Friday, Sept. 7, 1984]

ARIZONA TOPS IN PER-FARM '82 SUBSIDIES

By Jim Michaels, States News Service

WASHINGTON — Arizona farmers harvested more per farm in federal payments in 1982 than farmers in any other state, according to a new Senate Budget Committee report.

Farmers in the state received an average of $27,040 each, compared with a national average of $3,297 in direct subsidy payments for disaster relief and for compensation for inadequate market prices.

An abstract from a forthcoming committee report said subsidies paid to farmers nationwide totaled $1.8 billion in 1982. It did not specify the total that Arizona farmers received, but said the Western region, which also includes California, Hawaii, Nevada, New Mexico and Utah, received $162.6 million, or 9 percent of total payments.

The large disparities in subsidy payments may color the next year's congressional debate on the 1985 farm bill. Currently, payments are based on production, which gives more money to large farms. Some lawmakers advocate changing the system to increase payments to small farms.

Arizona farmers received large payments because farms in the state are much larger than the national average, said Andy Kurtz, executive secretary of the Arizona Farm Bureau Federation. The state average is 5,500 acres per farm, compared with a 400-acre national average, he said.

"There is bound to be a difference" between the state and other averages, Kurtz said.

Another reason for Arizona farmers reaping large federal payments is that cotton — which accounts for one-third of the state's agricultural production — in 1982 "received the largest portion of total direct payments," the report says.

Cotton farmers nationwide got $640 million in deficiency payments and an average payment of $7,767. Cotton accounted for 35 percent of the deficiency payments and 88 percent of disaster payments.

Kurtz said 1982 was a "diasastrous" year for cotton. It was selling for 52 cents a pound, and farmers need 70 cents a pound to break even.

In 1982, cotton farmers "were losing their shirt and losing it fast," said Kurtz. Cotton sells for about 62 cents a pound now.

William Hoagland, a budget committee staffer and co-author of the study, said the findings will be provided to the Senate Agriculture Committee when the farm bill is considered.

Hoagland said questions about how the benefits are distributed, with large farms reaping the most and certain crops getting more relief than others, may become issues when Congress considers the farm bill. The last omnibus farm bill was passed in 1981 and expires next year.

"The 1982 distribution of direct payments generally shows that producers with more than 500 acres received a disproportionate share of program benefits at the expense of smaller producers," the report concludes.

"Ten percent of the payments went to 50 percent of the smallest producers — those with less than 140 acres. Thus if Congress desires to provide greater income assistance to the smaller producers a different mechanism for determining payments would have to be devised from the current one," the report says.

If the government is concerned with giving farmers income help and not only with adjusting supply, then Congress should think about changing the criteria for providing direct subsidies, the report contends.

Other states where farmers received large payments were California and Mississippi, getting $15,690 and $11,100 per farm, respectively. The lowest payments went to farmers in Maine, New Hampshire and Massachusetts, which averaged $228, $241 and $303 per farm, respectively.

The commodity programs examined by the study were for wheat, cotton, corn, barley, sorghum, oats and rice.

HEADGATE ROCK HYDROELECTRIC PROJECT

LETTER FROM PETE HOMER, JR., ARLINGTON, VA.

May 16, 1985

Senator Mark O. Hatfield
Chairman, Energy & Water Div. Committee
SD-142 Dirksen Senate Office Bldg.
Washington, D.C. 20510

Dear Senator Hatfield:

While serving in the Senate you have developed a particular expertise in the areas of energy, water and power which we, the Colorado River Tribes, seek to draw upon. I am writing on behalf of the CRIT to request your support for an extremely important initiative, the Headgate Rock Hydro-electric Project.

Very recently I went to Arizona and met with the Colorado River Indian Tribes Tribal Council. I brought them up to date on the realities on the "budget cutting" mood in Washington and assisted them in developing several alternatives that can result in the completion of the Headgate Rock Hydro-electric Project.

As you are aware, OMB director Stockman's last minute manuevering deleted funding for Headgate during FY85. The CRIT strongly feels that, during FY86's Congressional budget resolution process, beneficial manuevering could be possible by adding another $14 million to this project. We ask that you consider working on our behalf in adding this additional funding to the appropriations request at the appropriate time.

The FY 1986 Department of Interior Bureau of Reclamation request will contain a specific line item of $1 million to launch the Headgate improvement project; this budget request is insufficient.

The Colorado River Indian Tribes request your assistance in increasing the $1 million to $5 million. In addition to the $4 million that we propose to be added to the Department of Interior's budget, we've also requested that an additional $10 million under another appropriation authority be devoted to this project, increasing the current Department of Interior appropriation by $14 million.

Hopefully at the appropriate time this request could be tacked on as an amendment to Interior's appropriation budget.

In addition to seeking government support, the CRIT have begun to explore a public-private sector joint venture to complete the hydro-electric project. The response and interest has been overwhelming from the private sector, particularly from nearby utility companies such as San Diego Power and Light and Arizona Public Service.

All parties would gain by this strategy, and the completion of the Headgate Rock Hydro-electric Project. We need cost-effective energy options in the Southwest, and Headgate Rock has consistently been analyzed as one of the best projects.

I am excited about the opportunity to assist in launching an economic venture that will benefit the state of Arizona. Please do not hesitate to contact me for more details on our innovative strategy to complete the Headgate Rock Hydro-electric Dam Project.

For your information, I have attached our latest complete summary on the Headgate Rock Dam Project.

With Best Personal Regards,

Pete Homer, Jr.
Vice President

REPORT PREPARED BY PETE HOMER, JR.

HEADGATE ROCK HYDROELECTRIC POWER PLANT

I. INTRODUCTION

As the 99th Congress begins, I would like to bring you up to date on Colorado River Indian Tribes number one Community development priority, Headgate Rock Dam Hydroelectric Improvement Project.

We regret that this number one Community development priority did not receive appropriations this past autumn (1984) during the hectic conclusion of the 98th Congress. The hard work and dedication by the Bureau of Indian Affairs, Bureau of Reclamation, and the Senate and House Congressional Members in attempting to finally launch the Headgate Rock Dam Hydroelectric improvement project was appreciated by all Colorado River Indian Tribes membership and citizens.

We feel very positive that the new Congress has the ability to act favorably upon this cost-effective project, particularly with their past dedication and support. The Colorado River Indian Tribes will again seek their commitment and assis-tance in achieving true economic self-sufficiency, through reintroduction of legislation.

Last autumn, $5 million in appropriations targeted to launch the hydroelectric project at Headgate Rock Dam was vetoed on the recommendation of the Office of Management and Budget. This $5 million would in fact have been a small part of the $51 million for total completion of our hydroelectric project that was specifically approved and announced by President Reagan and Secretary of Interior, James Watt only two years before, after the Administration's careful assessment of the economic benefits. However, the $5 million would have gone a long way in starting this project, since it will take about four years to complete.

Last year's near approval and launching of this important, economically viable, cost-effective water-project completion was but another example of a forty (40) year history of the federal government not recognizing the economic feasibility of supporting relatively smaller scale, but highly efficient hydroelectric power projects.

For the past twenty (20) years, we have jointly shared frustration with the Bureau of Indian Affairs and the Bureau of Reclamation over this project. Continually, their studies and analyses (and ours), of this proposed project have pointed out its cost-savings to the U.S. Government through excellent cost benefit ratios and indirectly referenced the prime and development potential that an economically independent people, like the Colorado River Indian Tribes and their neighbors, would enjoy from its completion.

It is imperative that Congress reintroduce legislation as soon as possible or combine it with appropriate Bills, as they see fit, to assist the Tribes in satisfactorily resolving the fate of the Headgate Rock Hydroelectric Projects' completion. Besides the Bureau of Reclamation recognizing this Project as one of the top two most feasible water projects present today, there are numerous other factors that mandate the support of the Legislative and Executive Branches of the U.S. Government. These include:

1. A full-faith Treaty signed in 1865 between the U.S. Government and the Mohave Indians, in which development of economically feasible irrigation projects and use of water was an integral part.

2. An eighty (80) year realized implementation of this commitment, resulting in irrigation canals and the Headgate Rock Dam.

3. Supreme Court recognition and gratification of the water rights of the Colorado River Indian Tribes.

4. Constant government attempts to launch the hydroelectric power completion of Headgate, which have been frustrated by numerous factors.

I must emphasize that inherent in these failed government attempts towards completion of this project there have been numerous cost benefit analyses clearly displaying the economic benefits to all people in the area, and return to the U.S. Government of its initial capitalization.

The people of the Colorado River Indian Tribes are proud and have worked hard to develop some economic successes over the past few years.

The realization of the completion of this hydroelectric project will provide us and our neighbors many economic alternatives and opportunities (I must stress that this is not a new project, it has been on the planning boards for over forty years). It will increase the profitability of our present farms and economic ventures. Currently we are forced to buy power from the Arizona Public Service Company (APS). This company unfortunately derives the majority of its power from non-renewable fossil fuel, and has many demands on it from across the state. Completion of the Headgate Rock Project will allow APS to serve others more adequately and at less expense. The energy produced by Headgate power plants new generators will roughly be equivalent to 160,000 barrels of oil annually.

The uses of the future electric power would be varied. Primary among them would be adequate agricultural irrigation. We would be able to utilize more than our irrigable land, and use the full amount of the water that the Supreme Court guantified for us.

As yet, we do not have that capacity, and are concerned about preserving our fair water rights. Some of the electric power would also be targeted for residential use, commercial use, and drainage pumping. All uses are economically viable and will generate profits to repay the U.S. Government.

II. HISTORICAL OVERVIEW

At this point I will explain the important historical aspects of the Colorado River Irrigation Project.

The Colorado River Indian Reservation was established by Act of Congress, approved by the President on March 3, 1865 for the Indians of the Colorado River and its tributaries. The reservation was established on the recommendation of Colonel Charles D. Poston, Superintendent of Indian Affiars of Arizona Territory. In his report to the Commissioner of Indian Affairs, dated September 30, 1864 Colonel Poston proposed construction of an irrigation system and presented a report and map of the proposed project, prepared by Mr. A.F. Waldimar, a civil engineer.

Soon after making his report and recommendation, Colonel Poston was selected as the delegate to Congress from the newly organized Territory of Arizona. It was largely due to his efforts that the reservation was established so soon.

Prior to construction of an irrigation canal the Indians along the Colorado River had grown crops of melons, beans, pumpkins, and corn on lands which had lately been inundated by annual overflow of the river. The areas selected for planting contained soils that retained sufficient moisture to mature the crops without further irrigation. The Indians also used mesquite beans for much of their food supply.

A survey and more detailed plans and estimates for an irrigation canal were made by Mr. Waldimar in 1866 and work was begun on December 16, 1867 Congress having appropriated $50,000 under an Act of March 2, 1867 for beginning the construction. This was the first appropriation ever made by Congress for construction of an irrigation project. An additional $50,000 was appropriated on July 27, 1868 to complete the canal.

In 1869, when the irrigation canal on the Colorado River was nearing completion, Iracaba, Head Chief of the Mojaves, with about 820 of his followers moved from the Mojave Valley to the reservation. There remained about 700 Mojaves in the Mojave Valley.

Water was first turned into the canal on July 4, 1870 but due to faulty design or construction of the headgate and to the unusually high stage of the river a much greater quantity of water was admitted than the canal would carry. The banks were washed away for some distance below the agency and the headgate was left in a very unstable condition. The headgate was repaired and the canal was used successfully for about two months, during the summer of 1871, when the height of the river was such as to allow the diversion of water. This headgate was located at the beginning of the valley, about 2 1/4 miles downstream from the present headgate at Headgate Rock Dam. Without a diversion dam, the varying level of the river caused a very severe problem in diversion of water. The canal was called the Grant-Dent Canal, after U.S. President Grant and Superintendent of Indian Affairs, George W. Dent.

And the agent reported "while there has been no legal allotment of lands, I notice these Indians thoroughly respect the allotments made by the farmer for farming purposes along the ditch."

A pumping plant of still larger size was constructed in 1911-1912. It consisted of two 20" centrifugal pumps on a common shaft, with a capacity of 25 cubic feet per second each. They were driven by a 150 H.P. tendem, compound Corliss engine. The engine was served by two 125 H.P. boilers. The machinery was housed in a concrete building 82' x 57', with walls 16 feet high, exclusive of the pump pit and forebay which were 22 feet wide and 53 feet long.

A second steam pumping unit consisting of a 36" centrifugal pump with a capacity of 75 second feet, driven by a 225 H.P. simple Corlis engine was installed in the same building with the first unit, in 1918.

Fuel for the 1912 and 1918 units was oil, brought to the plant from a spur on the Santa Fe Railroad through 6,000' of 4 1/2" pipe.

In 1929 a 250 H.P. Western diesel engine was installed to replace the 225 H.P. Corliss steam engine and in 1933 a Fairbanks-Morse 150 H.P. diesel engine was installed to take the place of the 150 H.P. Corliss engine.

In April 1940 the crankshaft of the 250 H.P. Western engine driving the 36" pump broke in one of its webs. Fortunately the crankshaft could be repaired in Los Angeles and the engine was put back in service on May 2, 1940.

In April 1941 the 34,500 volt power transmission line from Parker substation of the Metropolitan Water District to the Agency was completed, and the line was energized on April 30.

In June 1941 the 250 H.P. Western engine with the weakened crankshaft was replaced by a 250 H.P. electric motor. This motor served until Headgate Rock Dam and the canal from the dam to the old irrigation system were completed, August 1941 and June 1942 respectively.

The 1912 pumping plant, with the addition of the 36" pump in 1918, delivered 125 cubic feet per second and served a project of 7,576 acres.

Under Acts of May 25, 1918 and June 30, 1919 Congress appropriated funds to conduct surveys and prepare plans and estimates for a complete irrigation system to supply water to the Colorado River Indian Reservation. Under the supervision of Engineer A.L. Wathen, topographic surveys were made of the entire valley area. On June 30, 1920 Engineer C.A. Engle submitted a report on the proposed project. This report was submitted to Congress by the Secretary of the Interior on February 8, 1922 and is included in the hearings on "H.R. 11449, a Bill to Provide for the Protection and Development of the Lower Colorado River Basin, 1922."

Favorable action by Congress on the proposed project did not occur until after construction of Hoover Dam. The construction of Headgate Rock Dam was authorized in the Rivers and Harbors Act approved August 30, 1935. Appropriations followed, beginning with the Act of August 9, 1937. A contract for construction of the dam was entered into June 15, 1938, with Rohl Connolly Company. The construction was completed in August 1941.

Construction of approximately 2,000 feet of the main canal was included in the contract with Rohl Conolly Company. The remaining approximately two miles of canal needed to connect the old irrigation canal was done with project forces in Fiscal Year 1942.

The work included construction of a concrete lined tunnel under the Santa Fe Railroad tracks and State Highway 72. The tunnel is 400 feet long and designed to carry 2,100 cubic feet per second of water. The canal was completed and water delivered into the old system on June 28, 1942.

The war with Japan beginning on December 7, 1941 brought on the removal of persons of Japanese ancestry then living along the pacific coast. The first relocation center selected by the U.S. Army, for 20,000 of these people was on the Colorado River Indian Reservation. An agreement with the Bureau of Indian Affairs provided that the War Relocation Authority construct an extension of the main canal to the relocation area, a distance of approximately 14 miles, and the construction of laterals to serve the new farm lands that the incoming people would develop and use. Restrictions on movements of the people of Japanese ancestry resulted in employment of others, including Italian prisoners of war, in construction of the large structures on the canal. The Bureau of Indian Affairs operated the relocation center intially for the War Relocation Auchority. Bureau personnel including engineers and foremen, were transferred to Parker from Indian agencies as far away as Montana.

In addition to 14 miles of main canal the War Relocation Authority constructed 21 miles of laterals and 24 miles of farm ditches. It developed approximately 2,000 acres of farm land, extended the 34,500 volt power transmission line

approximately 13 miles, constructed 16 miles of main drainage canals and constructed 21.27 miles of high standard asphaltic paved highway connecting the relocation camps to State Highway 72 near Parker.

The War Relocation center was closed late in 1945.

Following the war, the Bureau of Indian Affairs began a program for settlement of Navajo and Hopi Indians on the Colorado River Reservation. A group of 16 families of Hopi Indians were settled September 1, 1945 on lands previously developed by the War Relocation Authority. By 1948 there were 27 Hopi and 7 Navajo families on the project.

Funds in the amount of $470,000 were appropriated for irrigation construction and land development in Fiscal Year 1948. The land development feature included planting and establishing a stand of alfalfa on each tract of 40 acres prior to its assignment to a Navajo or Hopi settler.

For Fiscal Year 1949 there was appropriated $3,000,000 for irrigation construction and land development. Lesser amounts were appropriated in following years. By November 1952 there had been developed 19,536 acres of new land, of which 10,120 acres had been asigned to 253 families, including 95 Navajo, 38 Hopi, 3 Supai, and 127 Mojave and Chemehuevis.

By the end of 1954 there were approximately 34,000 acres under irrigation. This figure remained static for about twelve years, while several important questions were being answered. These questions related to ownership of the reservation land, the length of time for which improvement leases could be made and to water rights. Acts of Congress of June 11, 1960 and September 5, 1962 gave the Secretary of Interior authority to make long term leases on the reservation. The Act of April 30, 1964 determined that title to the land is in the Colorado River Tribes and the Decree of the U.S. Supreme Court on March 9, 1964 set the water right of the reservation.

With the settlement of these questions the way was open for long term improvement leases for development and use of the lands. The first such lease was with the Bruce Church Company in 1964. The lease covers 6,400 acres of land and is for a period of 25 years. The company completed its development in four years. It spent $2,300,000 in its development program which included installation of 41.19 miles of 30", 36" and 42" concrete pipe in its distribution system. The Bruce Church farm is a model operation.

Other large leases, but for smaller areas, were subsequently made. By the summer of 1966 there were 37,457 net acres of developed lands, of which 36,919 acres were cropped. By the summer of 1969 there were 52,571 net acres developed, of which 51,149 acres were cropped. The value of the crops raised in 1966 was $7,153,642 and in 1969 it was $17,725,881. Approximately $6,000,000 of this increase in value was due to increases in acreages planted of lettuce and cantaloupes, and prices for these crops.

This brings the history of the project about up to date. Approximately thirty to forty thousand acres have not yet been developed.

III. PRESENT STATUS

The current history and feasibility of this project is that the first economic and financial feasibility study for installation of a Hydroelectric Generating Facility at the Headgate Rock Dam on the Colorado River Indian Reservation was completed by the Bureau of Reclamation in December of 1976. Initial investigations were accomplished by a reconnaissance study of the Headgate Rock Dam Power Potential in July of 1965. The economic analysis and feasibility study was updated in June of 1974 and indexed to July, 1975.

In a Western Energy Expansion Study in 1979, Western evaluated 92 potential Hydroelectric Power Plant sites for their feasibility and Headgate Rock Dam was rated as Number 2.

The Colorado River Indian Agency comprises 264,331 acres of land along the Colorado River of which 225,995 acres are in La Paz County, Arizona and 38,366 acres are in Riverside and San Bernadino Counties, California. Parker, Arizona is the largest town on the reservation.

Description

The Colorado River Indian Reservation has been in a phase of economic growth for the last few years and has a large potential for further development. The economy is centered around the expansion of irrigated agricultural land and water-oriented recreational development. There are about 79,000 acres of land presently under the irrigation and this will increase to 107,000 acres in the next few years.

The reservation's electric power requirements are presently supplied by allocation from the Department of Energy from the Parker-Davis and Colorado River Storage Projects and the requirements in excess of these allocations are purchased from the Arizona Public Service Company. The purchased power from the Arizona Public Service Company is the largest item in the Irrigation Power Project Budget, amounting to $3,371,004.72 for FY 1983. This is about 8 times the cost of power received from the Department of Energy.

Headgate Rock Dam is located on the Colorado River 14.5 miles downstream from Parker Dam. The Dam was constructed in 1941 to provide diversion facilities with sufficient capacity to serve about 107,000 acres of land on the Colorado River Indian Reservation.

The Headgate Rock Power Plan would supply all future electric power requirements for the operation of the irrigation and drainage facilities and a portion of the residential and commercial requirements on the Colorado River Indian Reservation.

The Hydroelectric Generation Plant would consist of three tube turbine units, each with a rated capacity of 6,500 kilowatts or a total capacity of 19,500 kilowatts. The turbines would be incorporated into the three spillway gates on the Arizona side of the river by the Dam Control House, of the existing Headgate Rock Dam. Draft tubes would discharge the river flow into the existing spillway channel. The power plant switchyard would be located adjacent to the left abutment of the spillway. A single 69 KV transmission line would be constructed from the power plant switchyard to the Headgate Rock Substation located about .6 miles south of the powerplant site.

Status

The project has been authorized for construction and a Memorandum of Agreement made between the Bureau of Reclamation and Bureau of Indian Affairs for the design. The Bureau of Indian Affairs funded $1,256,000 in prior years for the design of the project.

The Bureau of Reclamation included $5,000,000 in their FY 1984 supplemental appropriation request as a start-up funding and $9,100,000 in the FY 1985 appropriations request to continue the project. Last autumn this appropriation request was vetoed.

A Memorandum of Agreement has been made between the Bureau of Reclamation and Bureau of Indian Affairs where the Engineering and Research Center will update the designs and specifications on the projects. The Bureau of Indian Affairs will provide the advanced funding.

Justification

The Hydroelectric Power Facilities would be incorporated within the existing Headgate Rock Dam which reduce the construction cost and would provide an economic and pollution-free source of electrical energy using a non-depleting source of energy. Incorporating for the power facilities within an existing structure eliminates any environmental impact. The project has a cost benefit ratio of 1.6 to 1.0.

The estimated cost of the project is $61,320,000 to be paid back to the government over thirty to forty years.

The Colorado River Indian Tribes have discussed this project with the Bureau of Indian Affairs, Bureau of Reclamation, House and Senate Congressional Members. We have concluded that we are committed on following through until either the development was implemented or we arrived at specific reasons why this project would not be constructed. Attention to this matter in previous years resulted in feasibility studies being made and then shelved without significant follow-through.

We reaffirm that the following itemized subjects hold reason enough to follow through with the realization of Headgate Rock Hydroelectric Dam power plant.

A. The Bureau of Reclamation cited several conditions that would indicate now is an opportune time to proceed with this project. The conditions are as follows:

1. The Western Energy Expansion Study (as discussed in this report) established Headgate Rock Dam as a top priority, highly feasible project. (See enclosures.)

2. The national attitude for maximum development of pollution free energy.

3. The planned construction activity related to the Havasu Pumping Plant (CAP) will require engineering and other personnel to be in the area and in general will enhance Bureau of Reclamation's capacity to supervise the construction.

4. Investigations are currently underway to automate Parker and Davis Dam operations. This is an ideal time to include Headgate Rock Dam in a three-dam coordinated, automated system.

B. Many alternatives in the construction and management of the power resource were discussed. These ranged from two extremes of BIA construction and operating the facility to complete USBR construction, operation, and maintenance including marketing the power.

Considering our obligations and anticipating similar concern by the Tribal Council for power supply, economic benefits and employment opportunities, the alternative of a complete Bureau of Reclamation operation was not given detailed consideration.

Sole BIA participation was eliminated because of employment ceiling problems, prohibitive cost to contract on the open market, design and construction contract surveillance, the the necessity for a full range of technical skilled persons for a relatively small plant.

The preliminary conclusion, that will be subject to change or further refinement with tribal input and as more knowledge becomes available, is that basic funding and management will be the responsibility of BIA. Design and contract surveillance be done by USBR and the operation and maintenance be included with the Parker-Davis Dam automated system with a pool of technically skilled people to serve the three plants.

The option for a pro-rata share of employees (O&M) be reserved for qualified Indian candidates under the BIA personnel regulations was left open for further discussion.

C. Environmental considerations were discussed. Bureau of Reclamation officials were of the opinion that an assessment and negative declaration would probably be sufficient. They hastened to add their judgement on these matters as they have been wrong on occasion in the past.

The environmental impacts do appear to be insignificant, however, it is difficult to predict who may offer opposition to such a project. The environmental process will have a direct influence on the time table of the project.

D. Should all the interested parties elect to proceed with this project, detailed repricing of project cost will be necessary as well as an update on the feasibility. The cost of this was estimated to be seven to ten thousand dollars.

E. Hydroelectric power development is providing substantial energy and has a large additional potential of which small scale development is an important part.

F. Hydroelectric power has many advantages, such as being clean, continually renewable, dependable, and reliable energy resource.

G. We have a worldwide energy crisis pending, and all energy resources, especially hydroelectric, must be developed whenever feasible. Development must proceed along with intelligent energy conservation programs.

H. Mandatory purchase of power generated from small installations at existing dams, are making developments economically attractive.

I. An obligation exists for all to examine feasibility of possible small hydroelectric developments and to proceed with construction of those feasible.

While the amounts of electricity produced from hydropower and the potential are impressive, as an energy resource it is of much greater importance because of the following reasons:

1. It is a non-consumptive generator of electrical energy, utilizing a clean resource, continually renewable by the energy of the sun which creates and sustains the hydrological cycle.

2. It is essentially non-polluting and no heat is released. Adverse environmental impacts are minimum and for small installations are totally eliminated.

3. Small hydroelectric developments can be planned and built within one or two years time. Licensing requirements are being continually simplified and reduced, equipment is almost immediately available, and construction is relatively simple.

4. The generation of hydropower requires some type of water control, ranging up to full control of the discharge from a watershed, thus it is an important part of the multipurpose utilization of water resources and reduces the potential of destruction from floods. Water out of control is mankind's most destructive force. With storage facilities, floodwaters are retained and better utilized for food production; for river regulation, improving navigation, fish and wildlife, and recreational potential; for municipal use and better control of wastewaters; and the destructive force of flood flows, as well as the energy of normal flows, is harnessed to provide electrical energy for man's use.

5. It is a reliable source within the hydrological limitations of the site. The relative simplicity of hydraulic machinery makes energy instantly available as needed. As no heat is involved, equipment has a long life and malfunctioning is rare.

6. It can be made available in small installations at remote areas with relatively simple technology, and can be a catalyst in

developing other resources and creating opportunities for improving human conditions, as has been demonstrated in the past. As discussed, this was true in America, and is proving to be true in other areas of the world. For instance, in China during the last two decades over 85,000 small hydroelectric plants have been constructed with an average capacity of about 60 kilowatts. While these small units are recognized as a first step, they have done much to improve human conditions and make further progress and improvements possible.

7. Its reliability and flexibility of operation, including fast start-up and shut-down time in response to rapid changes in demand, makes it an especially valuable part of a large electrical system, increasing the overall economy, efficiency, and reliability of the entire system.

8. It has excellent peaking power capability, for the reasons outlined above. Storage of energy by pump storage systems is the most economical and trouble-free method available to date for large scale use. While about four units of energy input is required for three units of output, the input is low-cost energy and the output is high value energy meeting peak loads. Even so, in a large electrical system, the alternative for peak loads may be the utilization of old and relatively inefficient thermal units; in these instances the use of pump storage can result in overall savings of energy. In flat topography areas, all underground pump storage facilities have potential.

9. Its technology is well developed and proven, with efficiencies of turbines now as high as 95%. Units ranging from a few kilowatts up to 700,000 kilowatts are in operation, and while the equipment must be adapted to the specific site for greatest efficiency, full reliance can be placed on performance expectations.

10. Hydropower facilities have a long life; dams and control works will generally perform for a century or more with little maintenance required.

11. With the relative simplicity and reliability of the machinery, few operating personnel are required. Small scale installations are now being operated entirely from remote control. This, along with no requirements for fuels with their accelerating costs, and the long life of equipment makes hydroelectric power installations essentially inflation proof. This helps provide stability to electricity billings.

12. Hydropower development makes maximum use of local materials and labor, and thus compared to heat-power facilities, usually is much more appropriate in providing local employment when this is a factor to be considered, and in developing country programs. This was a major factor for the large number of small hydro installations in China.

13. A vast quantity of hydropower remains to be utilized, especially in the developing countries, which on the average have developed less than 7% of their potential; in some countries it is less than 2%.

14. The economic feasibility of hydropower is improving, compared to other energy sources which use finite fuels. With more realistic methodology of economic evaluation, including full recognition of the value of non-use of depletable resources; of not being dependent upon fuel resources controlled by others; and of a non-polluting generator of energy; hydropower becomes increasingly attractive.

15. In the United States, great potential for additional electrical energy with a minimum of capital or energy costs, exists at present hydro powerhouses and at dams without hydro installations, improvements in turbine and generator efficiency makes upgrading of many present equipment installations especially attractive. Changes occurring in river basin hydrology can often be utilized for greater electrical production by existing facilities.

ECONOMIC AND FINANCIAL ANALYSES

The Headgate Rock Hydroelectric Power Project is economically justified. Benefits accruing from this development would exceed project costs by 80 percent, giving the project a benefit-cost ratio of 1.8:1.0. Revenues from the sale of electric power for irrigation and residential-commercial purposes would repay all reimbursable costs within a 50-year repayment period.

Economic Analysis

Economic justification is based on a comparison of annual benefits and annual project costs. Benefits anticipated from project development would result from the production of electric power for use primarily on the Colorado River Indian Reservation.

Project Benefits--The cost of obtaining the same quantity of electric power from the most likely non-Federal alternate source was used as a measure for determining benefits that would be derived from the construction of hydroelectric power facilities at Headgate Rock Dam. Arizona Public Service Company was considered the most likely non-federally financed source of power if the project were not constructed. It was estimated by the Bureau of Indian Affairs that firm energy could be obtained for an average rate of 8 mills per kilowatt-hour. This rate was compared with those of thermoelectric plants. The value for secondary energy was estimated to be 3 mills per kilowatt-hour.

The annual equivalent project benefits that would occur with project development were estimated to be $573,000 for a 100-year period of analysis, based on an interest rate of 3.125 percent.

Construction Schedule

The estimated construction time for the Headgate Rock Hydroelectric Power Project is about 4 years from the time funds are made available. During the first year, work would include preconstruction investigations and the preparation of the designs and specifications. At the beginning of the second year, bids would be advertised and the construction contract awarded. It is estimated that 630 days would be required to complete the prime contract and the supply contracts after they have been awarded. The installation and testing of equipment would require an additional 250 days. All construction would be completed in January of the fourth year. The Control Schedule, PF-2, shows the construction order and fund requirements.

Operation, Maintenance, and Replacement Costs

The operation, maintenance, and replacement costs of the 13,000-kilowatt power plant, switchyard, 0.6-mile transmission line and terminal facilities are estimated to total $67,000 annually.

The estimated cost of operating and maintaining the Headgate Rock power facilities is based on semiautomatic operation of the power plant and integrating the operation and maintenance with that of the Bureau of Reclamation's power facilities at Parker Dam. The operation and maintenance cost that would be attributed to Headgate Rock is estimated to be $50,000 annually.

The estimated annual provision for replacements is $17,000.

Project Costs--Annual equivalent project costs associated with the benefits were estimated to be $316,000 over the 100-year period of analysis. The conversion of project construction costs to annual costs

was based upon an interest rate of 3.125 percent. The following tabulation shows the derivation of the average annual equivalent costs:

Project Costs	$7,323,000
Interest During Construction @ 3-1/8%	365,000
	$7,688,000
Less Investigation Costs to 6/30/67	-80,000
Net Federal Investment	$7,608,000
Average Annual Equivalent Costs ($7,608,000 x .03276 (100 yrs @ 3-1/8%))	$ 249,000
Average Annual Equivalent O&R	67,000
Average Annual Equivalent Costs	$ 316,000

Benefit-Cost Ratio--The annual project benefits of $573,000 divided by the annual project cost gives a benefit-cost ratio of 1.8 to 1.0.

Financial Analysis

The repayment analysis included in this study follows standard Bureau of Reclamation procedures. Since this is a single-purpose project for which all benefits are attributed to electric power production, all project costs are considered reimbursable. The reimbursable costs of $7,589,000 include $2,146,000 allocated to irrigation designated to be interest free, and $5,443,000, including $266,000 interest during construction allocated to commercial power. The costs allocated to commercial power would be repaid with interest on the unpaid blance at a rate of 3.222 percent. Annual operation, maintenance, and replacement costs were calculated on the basis of having an operating agreement with the Parker-Davis Project, and were estimated to be $67,000.

All project costs could be repaid by power revenues within 50 years after the project becomes operational. The repayment of project costs would require an average rate of return at the plant bus bar of 4.9 mills per kilowatt-hour for firm commercial energy, 2.8 mills per

kilowatt-hour for energy utilized for irrigation purposes, and 3.0 mills per kilowatt-hour for secondary commercial energy. It was assumed that secondary energy could be marketed through Parker-Davis Project facilities. Project repayment would be accomplished by applying all revenues in excess of annual operating costs to the interest-bearing portion of the investment until fully amortized, and then repaying the interest-free obligation. Revenues resulting from the average rate of return for energy at the plant bus bar would be sufficient to pay annual operation, maintenance, and replacement costs and return the obligation within a 49-year period and have a token surplus. Summary of the project payout study is presented in the following tabulation:

Income (49-year period)	
Firm commercial energy (4.9 mills per kilowatt-hour)	$11,147,000
Secondary commercial energy (3.0 mills per kilowatt-hour)	913,000
Irrigation operations energy (2.8 mills per kilowatt-hour)	3,165,000
Total Income	$15,225,000
Repayment (49-year period)	
Interest-bearing investment (commercial power)	$ 5,443,000
Interest-free investment (irrigation)	2,146,000
Interest on unpaid balance	4,341,000
Operation, maintenance, and replacement	3,283,000
Total Repayment	$15,213,000
Surplus	$ 12,000

If all project costs had been considered interest bearing--without a suballocation to irrigation--repayment within the 50-year period would require an average rate of return of 5.2 mills per kilowatt-hour for firm energy and 3.0 mills per kilowatt-hour for secondary energy at the plant bus bar.

Table 4 shows the payout schedule for the Headgate Rock Hydroelectric Power Project based on the average rate of return at the plant bus bar.

FY-1986 SENATE-HOUSE APPROPRIATION DOCUMENT

REGION
Lower Colorado

PROJECT DATA SHEET

PI 65 (2 84)
Bureau of Reclamation

PROJECT AND STATE
HEADGATE ROCK HYDROELECTRIC PROJECT, ARIZONA

Completion Date	% Complete	Date
1992	0	1/31/85

AUTHORIZATION
Snyder Act of November 2, 1921 1/

BENEFIT COST RATIOS

Based on Direct Benefits	Based on Total Benefits	Date
1.4 4/	1.4 3/	10/1/85

LAND CERTIFICATION
None Required

DEFINITE PLAN REPORT
2/

SUMMARIZED FINANCIAL DATA

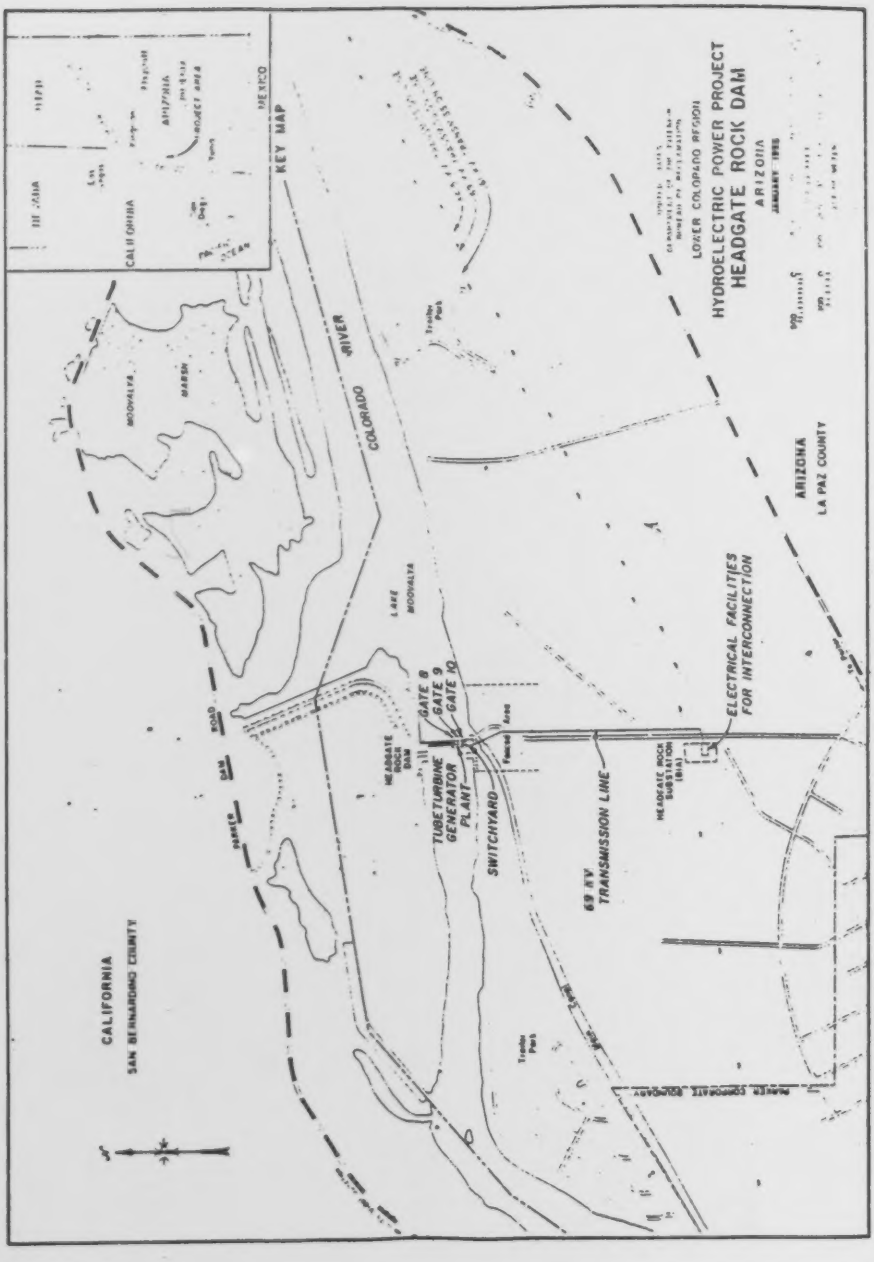
Total Federal Obligations (Reclamation)	8/	$58,100,000	Allotments to September 30,1984 $
Net Property and Other Transfers:			Allotments for FY1985
Federal Participation	4/	1,387,000	
Non Federal Participation			Allotments to Date $
Adjustment	5/	7,516,000	Allotments Required for FY 1986 1,000,000
Total to be Allocated		$67,003,000	Balance to Complete after FY 1986 $57,100,000

ALLOCATIONS 6/		REPAYMENT		AMOUNTS PER ACRE	
Irrigation	$15,645,000	Amount Repaid by Irrigators		Irrig. Invest. per Acre	Payment Capacity per Acre
Power	51,358,000	Amount Repaid by Power 7/	$67,003,000	Repayment of Investment per Acre:	Annual Charges:
M & I Water		Amount Repaid by M & I Water		By Irrigators	O & M
Recreation				By Power Revenues	Construction
F & WL				By M & I Water Users	
Flood Control					
Other		Nonreimbursable			
Total	$67,003,000	Total	$67,003,000		Total

STATUS OF REPAYMENT CONTRACT: Reclamation will transfer the plant to the Bureau of Indian Affairs upon completion of construction. Requirement for repayment will be determined by the Bureau of Indian Affairs.

STATUS OF NEPA COMPLIANCE: Finding of No Significant Impact was filed on August 22, 1980.

DESCRIPTION: This project is located at Headgate Rock Dam on the Colorado River between La Paz County, Arizona, and San Bernardino County, California, near Parker, Arizona. The project consists of constructing a powerplant and installing three turbine generating units and associated transmission facilities at the existing dam. The project will provide for a total of 19,500 kilowatts of capacity and an annual average production of 86.5 million kilowatt-hours of energy for irrigation and drainage pumping and other uses on the Colorado River Indian Reservation.


KEY MAP
CALIFORNIA
MEXICO
HYDROELECTRIC POWER PROJECT
HEADGATE ROCK DAM
ARIZONA
LOWER COLORADO REGION
CALIFORNIA
SAN BERNARDINO COUNTY
ARIZONA
LA PAZ COUNTY
COLORADO RIVER
LAKE MOOVALYA
MOOVALYA
OASIS
DAM ROAD
PARKER
HEADGATE ROCK DAM
GATE 8
GATE 9
GATE 10
TUBE TURBINE GENERATOR PLANT
SWITCHYARD
69 KV TRANSMISSION LINE
ELECTRICAL FACILITIES FOR INTERCONNECTION
HEADGATE ROCK DAM-PARKER (161 kv)
Trailer Park
Fenced Area
MARTZ CONSTRUCTION RAILROAD

PROJECT DATA SHEET - 2
HEADGATE ROCK HYDROELECTRIC PROJECT, ARIZONA

Funds to start preconstruction activities were appropriated to the Bureau of Indian Affairs in FY 1980. Funds to start construction will be requested for fiscal year 1986.

OTHER INFORMATION: Headgate Rock Dam was authorized under the River and Harbors Act of 1935. Construction was initiated by the Bureau of Indian Affairs in 1938. The dam was completed in 1941 to provide permanent diversion facilities for irrigation of up to 100,000 acres of land in Arizona on the Colorado River Indian Reservation. The powerplant is considered to be an extension of the Colorado River Indian Irrigation Project. Designs and specifications have been essentially completed. The cost of this work was reimbursed to Reclamation by the Bureau of Indian Affairs under a Memorandum of Understanding dated May 7, 1980. The present plan envisions construction responsibility, including funding, being fulfilled by the Bureau of Reclamation under a revised Memorandum of Understanding with the Bureau of Indian Affairs. Upon completion, the entire plant will be transferred to the Bureau of Indian Affairs for operation and maintenance and repayment.

Footnotes:

1/ Construction of a powerplant at Headgate Rock Dam by Reclamation is authorized under the Snyder Act of November 2, 1921, 42 Stat. 208.

2/ An Advanced Planning Report was submitted to and approved by the Bureau of Indian Affairs in June 1980. This report will serve as a Definite Plan Report.

3/ The ratios were computed using the interest rate of 7.625 percent.

4/ Represents funds transferred to Reclamation by the Bureau of Indian Affairs for design and specifications prior to Reclamation's decision to seek funding for construction of this project.

5/ Represents reimbursable interest during construction of $7,516,000 for power.

PROJECT DATA SHEET - 3
HEADGATE ROCK HYDROELECTRIC PROJECT, ARIZONA

Footnotes: (continued)

6/ Explanation of changes in allocations from fiscal year 1985 Budget Justifications:

Allocation	FY 1985 estimate	FY 1986 estimate
Irrigation	$ 15,014,000	$ 15,645,000
Power	46,308,000	51,358,000
Total	$ 61,322,000	$ 67,003,000

Explanation	Amount of Change
Indexing (Oct. 1984 to Oct. 1985)	$ 5,681,000

7/ Upon completion, Reclamation anticipates transfer of the plant to the Bureau of Indian Affairs (BIA) for operation and maintenance and repayment. It will be the responsibility of BIA to establish the power repayment policy.

8/ This project is authorized under the provisions of the Snyder Act which does not specify an appropriation ceiling.

HEADGATE ROCK HYDROELECTRIC PROJECT, ARIZONA

PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM:

Headgate Rock Dam Powerplant

Three Generating Units - 6,500 kilowatts each

Transmission Line and Switchyard Additions

69-kilovolt Transmission Line - 0.6 mile

Appropriation Title: Construction Program
Construction Rehabilitation

HEADGATE ROCK HYDROELECTRIC PROJECT, ARIZONA - 5

FISCAL YEAR 1986

Work Proposed	Program
Headgate Rock Dam Powerplant. - A contract for furnishing turbines, generators, and governors will be awarded.	$1,000,000
TOTAL	$1,000,000

PF-40 (10-78)
Water and Power

HEADGATE ROCK HYDROELECTRIC PROJECT, ARIZONA

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1985 AND FISCAL YEAR 1986

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1984	FY 1985 PROGRAM	FY 1986 ESTIMATE	BALANCE TO COMPLETE
Construction Program					
Headgate Rock Powerplant	$58,100,000	$ ---	$ ---	$ 1,000,000	$57,100,000
Engineering and Design	(1,120,000)	---	---	(60,000)	(1,060,000)
Supervision and Administration	(4,480,000)	---	---	(240,000)	(4,240,000)
Total Construction Cost	$58,100,000	$ ---	$ ---	$ 1,000,000	$57,100,000
Other Project Costs	1,387,000	1,387,000	---	---	---
Total Project Cost	$59,487,000	$ 1,387,000	$ ---	$ 1,000,000	$57,100,000
Consolidated Expenditures and Credits	-1,387,000	-1,387,000	---	---	---
Total Expenditures	$58,100,000	---	$ ---	$ 1,000,000	$57,100,000
Total Obligations (Reclamation)	$58,100,000	---	$ ---	$ 1,000,000	$57,100,000
Method of Financing:					
Appropriation available and required	$ ---	$ ---	$ ---	$ 1,000,000	$57,100,000

SUBCOMMITTEE RECESS

The subcommittee will stand in recess until Monday, April 1, at 10 a.m.

[Whereupon, at 10:40 a.m. Thursday, March 28, the subcommittee was recessed to reconvene at 10 a.m. Monday, April 1.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1986

MONDAY, APRIL 1, 1985

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:08 a.m., in room SD–192, Dirksen Senate Office Building, Hon. James Abdnor presiding.

Present: Senators Abdnor, Mattingly, and Sasser.

NONDEPARTMENTAL WITNESSES

SOUTH DAKOTA WATER RESOURCE DEVELOPMENT PROJECTS

STATEMENT OF HON. LARRY PRESSLER, U.S. SENATOR FROM SOUTH DAKOTA

INTRODUCTION OF WITNESSES

Senator ABDNOR. The Subcommittee on Energy and Water Development of the Appropriations Committee will come to order.

We are pleased to have as our first two witnesses, Senator Pressler and Congressman Daschle.

When you two gentlemen are finished testifying, you are certainly welcome to come up here and take part in any questioning you want. We are all interested in this.

Senator Pressler, do you wish to start?

Senator PRESSLER. Thank you very much. I shall be relatively brief, because there are so many of our fine citizens from South Dakota here. I want to give them the full impact of the time. I know there are other States and other projects here also. So I shall just cover some of the highlights here.

First, I want to say that South Dakota has a long history of water development activities and efforts to obtain water development projects. South Dakota did give up a lot of land for the dams on the Missouri River, but South Dakota has never really been paid back in full.

We have had many disputes in our State. We have accomplished a WEB water pipeline project which is under construction. But in terms of the size of irrigation projects or water projects or water for human and livestock use, we face great challenges.

In fact, I think one of the greatest challenges we face is getting high quality water to towns and cities, and for rural water systems. Some of those issues are in other committees in terms of loans to rural water systems.

But increasingly our State and many small towns in our State, such as my hometown, have found their water does not meet a quality and standard for human consumption. New wells are being dug, but it is increasingly expensive. If we could find ways to use the Missouri River water to bring it westward in our State, it would be a great step forward.

There are many other projects, and one of them is the Belle Fourche irrigation project. That was one of the first projects constructed by the Bureau of Reclamation in the early 1940's when the Pick-Sloan Missouri basin project was authorized. Of course, Belle Fourche was before that. It is very much in need of refurbishing.

WEB Water Pipeline Project, South Dakota

The WEB water project is moving forward. When completed, the project will provide good water to a 10-county area and over 30,000 people will eventually be served. Construction began on the WEB project in 1973 and is moving ahead promptly. There are representatives here for that project who will give the committee a full report.

The administration has requested funding for the project at $18,525,000. I would encourage the committee to provide at least that amount of funding for the WEB project so construction can remain on schedule.

Perhaps of all of our projects the WEB project does represent a very wise use of money in terms of its connection onto rural water systems and its connection onto many other city systems.

Let me move forward, just touching briefly on some others. I will submit most of my statement for the record.

Belle Fourche Project, South Dakota

Construction and rehabilitation work on the Belle Fourche irrigation project is also ready to begin if funding is provided. This 80-year-old project is badly in need of modernization. The rehabilitation of the project was authorized in 1983. In fiscal 1985, $710,000 was provided for studies and design work. That work has been completed. Over 90 percent of the members of the irrigation district voted to approve a repayment contract.

Since the administration considers work on this 80-year-old project a new start, no funds have been requested. I would urge the committee to provide construction funding for the Belle Fourche irrigation project.

Missouri National Recreation River

Another ongoing project in South Dakota which needs further funding is the Missouri National Recreational River project. Several years ago under the Corps of Engineers section 32 demonstration project, several bank stabilization structures were constructed along the Missouri River, between Gavins Point Dam near Yankton, S. Dak., and Ponca State Park in Nebraska. These structures are needed to protect property from being lost to streambank erosion.

This problem was aggravated last summer by extremely heavy rains and flooding in the area. Just to maintain the structures will require $200,000, and additional funding could be used to begin development of the entire project as authorized.

CENDAK PROJECT, SOUTH DAKOTA

Currently, the Bureau of Reclamation is continuing its study and advance planning work on the Lake Andes-Wagner and CENDAK irrigation projects. These projects would provide irrigation water to two large areas in eastern South Dakota. This would help to stabilize crop production and the farm economy.

The administration's budget request includes funding for these investigations, and I would urge the committee to approve further study of the projects.

Also, the Corps of Engineers is conducting several important water studies in South Dakota, particularly eastern South Dakota—Big Sioux River, and western South Dakota studies.

One feature of the eastern South Dakota study in which I am particularly interested is the potential for another pipeline project, similar to the WEB project, to provide much-needed rural and municipal water to east central South Dakota. It is critical that funding be maintained for the continuation of these studies.

With the record Federal deficit and the effort to reduce Federal spending, I know that your committee will be faced with some very difficult decisions regarding funding of water projects. However, I hope the committee will keep in mind the key fact that for decades South Dakota has not gotten the share of water development it was promised. We have already taken more than our fair share of spending reductions in the area of water development.

With that I will conclude and ask unanimous consent to submit the remainder of my statement in the record. But a concluding remark would be that I think, to reiterate what I have said, we do have some very much-needed people water projects in South Dakota.

I know that there is a huge Federal deficit, but our State has not received water projects that other States have. It is only fair that South Dakota be given consideration.

So, with that I will conclude, and I thank you very much.

Senator ABDNOR. Thank you, Senator Pressler. Your entire statement will be made a part of the record.

[The statement follows:]

STATEMENT OF SENATOR LARRY PRESSLER

Mr. Chairman, I first want to commend you for holding these hearings and for giving me and all of the other South Dakotans a chance to express our views on funding of various South Dakota water projects. I would also like to welcome and thank all of the South Dakotans for taking the time to testify. Your coming here today makes the congressional delegtion's job easier.

Due to the time constraints the committee is under, my oral statement will be very brief so the witnesses from South Dakota will have more time to present their views.

As you are well aware, South Dakota made major sacrifices for the development of four mainstem dams on the Missouri River. In return, South Dakota was promised

water development. To date, that promise has not been fulfilled. For this reason, I urge the committee to carefully consider the comments of the witnesses here today and to provide adequate funding for the WEB, Belle Fourche, and Missouri National Recreational River projects, and studies of the Lake Andes-Wagner and CENDAK irrigation projects, as well as other projects in South Dakota.

Mr. Chairman, I want to again thank you for holding these hearings, and for giving me an opportunity to testify.

STATEMENT OF HON. TOM DASCHLE, U.S. REPRESENTATIVE FROM SOUTH DAKOTA

Senator ABDNOR. Congressman Daschle?

Mr. DASCHLE. Thank you, Senator Abdnor. There is no one who knows water projects in South Dakota better than you. Obviously, we are not here to tell you anything you do not already know and probably have taught us about water and water development.

I have a very traditional statement to submit in writing, which I will ask the same unanimous consent to insert it into the record.

Senator ABDNOR. The entire statement will be made a part of the record.

[The statement follows:]

STATEMENT OF CONGRESSMAN TOM DASCHLE FROM SOUTH DAKOTA

Mr. Chairman and members of the Subcommittee, I welcome the opportunity to once again express my strong commitment for South Dakota water resource development. I am privileged to have a large and distinguished contingent of leaders in the area of water resource development. We are honored to have with us the South Dakota Secretary of Water and Natural Resources Mr. Warren R. Neufeld, the Chairman of the WEB Water Development Association Mr. Morris Curle, the President of the Belle Fourche Irrigation District Mr. Daryld Williamson, past President and longtime member of the Upper Missouri River Bank Stabilization Task Force Mr. Earl Rowland, the Chairman of the Lake Andes-Wagner Irrigation Project Mr. Marc Goldhammer, and the Chairman of the CENDAK irrigation project Mr. Dave Hauschild. They have travelled a long way to have the chance to testify today, so I will keep my statement relatively brief.

I would like to start by assuring the Subcommittee that I am fully aware of the serious budgetary problems that we as a nation face. The nation is looking to Washington to reevaluate the spending priorities that have led to a budget deficit in excess of $185 billion. As a member of Congress, I have always been interested in identifying those expenditures which are frivolous or unproductive, and eliminating them. The challenge Congress faces is to distinguish between those expenditures which are unproductive and squander the taxpayer's dollar and those which are productive and prudent. I sincerely beleive that every one of the water development projects represented today can make the case that the expenditures they are requesting are not only productive and prudent, but are essential to the preservation of rural America as we know it today.

The crisis that American agriculture currently faces has come to the forefront during this Congress. The Congress has shown that they will not ignore the crisis, and are willing

to try to solve the problems with short term and long term measures. The family farmer is dependent on a consistent water source. Mother nature cannot always provide such a source, particularly in the semi-arid regions of South Dakota. South Dakota is more economically dependent on agriculture than any other State in America, and our agricultural economy is dependent on water. Quite simply, if the supply of water remains unpredictable, the agricultural economy is going to remain unpredictable and volatile. While water development is not a panacea for rural America's economic woes, it is an important step in helping to take some of the gamble out of farming and injecting some much needed stability into the agricultural economy.

I wish to remind the Subcommittee that South Dakota is not asking for a handout. We are asking that the federal government fulfill its longstanding commitment to develop South Dakota water resources as set forth in the Flood Control Act of 1944. As a result of the construction of the four main stem dams on the Missouri River in South Dakota, downstreams have enjoyed a tenfold increase in annual commercial shipping tonnage, enormous revenues from the generation of hydroelectric power, and the avoidance of billions of dollars in flood damage. I ask that the Subcommittee remember that there was a cost associated with these many benefits. More than 520,000 acres of rich bottomland was forever lost from production with the construction of these dams. South Dakota accepted this loss because of a commitment from the federal government that Pick-Sloan power would some day be used to irrigate 961,210 acres of South Dakota farmland. Unfortunately, the federal government has not made good on that commitment. Mr. Chairman, we are not asking for a gift, we only ask that the federal government keep its promise to South Dakota and allow water development to move forward rapidly.

At this time, I would like to offer for the consideration of the Subcommittee a few very brief comments on

specific aspects of the appropriations recommended for next fiscal year.

The administration has recommended an appropriation of $19,733,000 for the continued development of the WEB Rural Water System in fiscal year 1986. I strongly urge this Subcommittee to give favorable consideration to that recommendation. The project sponsor's spokesman, Mr. Morris Curle, will also explain to you the need for an additional $7 million that the project has the capacity to use in fiscal year 1985 to help accelerate their construction schedule. If the construction schedule is allowed to be accelerated now and in the future, a significant reduction in total construciton costs may very well be realized at a savings to the federal taxpayer. The purchasing power of the construction dollar is currently much greater than was expected. If, however, construction costs were to increase appreciably in the next year or two, the overall cost of the project would needlessly increase. WEB currently has the capacity to accelerate their construction schedule while the construction costs are down. I urge the Subcommittee to allow them to appropriate the extra funding they need to allow them to do so.

Not included in the Administration's budget proposal for the next fiscal year is a request for continued funding for the rehabilitation and betterment of the Belle Fourche Irrigation Project. Congress saw fit to authorize the rehabilitation and betterment of this project in 1983 so that it can continue to serve the people of South Dakota as it has for the past eighty years. The administration budget pretends that this project is a newly started project to be included in a freeze on new starts. Last year, Congress appropriated the first $700,000 for the rehabilitation to begin. The Bureau of Reclamation's own schedule calls for funding of $2.4 million for fiscal year 1986. I ask that the Subcommittee approve this amount and keep rehabilitation work

on schedule. This project, first built in 1906, has been called the "Granddaddy of Bureau of Reclamation Projects." Only David Stockman could be creative enough to now categorize this project a new start after eighty years of service. This ploy simply will not work. This is an existing federal project that is desparately in need of repair and I urge that the Subcommittee see the wisdom in inserting an appropriation so that the rehabilitation can continue as Congress intended.

The Administration has also again failed to request an appropriation for the operation and maintenance and construction of streambank protection structures along the 59 mile stretch of the Missouri River designated as the Missouri National Recreational River. Last year the Congress saw fit to insert an appropriation of $200,000 for the operation and maintenance of existing streambank protection structures. It was not until about a month ago that the Corps of Engineers agreed to expend that appropriation. I am pleased that the funds have finally been expended as Congress intended, but I am extremely displeased that this delay occurred. I urge that this Subcommittee provide another $200,000 for the next fiscal year for the operation and maintenance of existing streambank protection structures. I would also urge that $2.5 million be appropriated for the funding of the Missouri National Recreation River project which Congress has authorized. In so doing we can take the first big step in halting the rapid and tragic erosion of our land along the Missouri River.

The Bureau of Reclamation has recently completed its Planning Report and Draft Environmental Statement on the Lake Andes-Wagner Irrigation Project. That report is very encouraging indeed, and we are looking forward to holding hearings very soon to secure authorization of that project. The Lake Andes-Wagner Project Chairman, Mr. Marc Goldhammer, will explain the need for $900,000 to be appropriated this year, subject to authorization. If authorization for Lake Andes-Wagner is swiftly secured, as we hope it will, there

will be a need for seed money to get the project under way. Lake Andes-Wagner is a well thought out plan that would provide much needed irrigation for 45,000 acres in Charles Mix County. I urge the Subcommittee to approve the requested approriation subject to authorization.

The Administration has proposed that the budget include a $1,775,000 appropriation for advanced planning and $50,000 for general water delivery studies for the Central South Dakota Water Supply Project (CENDAK). Hopefully the Bureau of Reclamation can complete the long awaited Advanced Planning Report for CENDAK in the next couple of weeks and authorization hearings can be scheduled in the very near future. CENDAK enjoys a great deal of local support and will provide for the staged development of state-of-the-art sprinkler irrigation for 474,000 acres in Hughes, Sully, Hyde, Hand, Faulk, Spink, and Beadle Counties. I urge that this Subcommittee approve the budget recommendation made by the Bureau of Reclamation so that CENDAK can move forward as scheduled.

Mr. Chairman, this concludes my prepared statement. If any members of the Subcommittee have any questions at this time, I would be glad to answer them.

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NATIONAL SECURITY IMPLICATIONS

Mr. DASCHLE. I think I would like to take a couple minutes to talk about something that is not something you hear a great deal about when you talk about some of these things. The fact is you are looking at a national security system when you look at that map. I think we need to demonstrate that fact over and over again.

When we talk about agriculture, when we talk about water development in rural areas this year, we are talking about national security. When you talk about this element of national security, our country is in a disastrous and very perilous condition today.

It seems to me if we can provide the kind of grandiose assistance we did to the European nations after World War II and call it the Marshal Plan, if we can provide an incredible amount of assistance to CETO and all the nations we did after Korea, Vietnam, and call that another plan, if we can now bail out the Ethiopians with the problems that they have—and they are legitimate ones—then it seems to me with the depression we have in agriculture we have no choice but to turn our attention and provide a type of Marshal Plan to rural America.

This is what we are talking about when we talk about a Marshal Plan for rural America. We are not just talking about a farm bill; we have to be talking about agricultural development through water as well.

So we have a depression today in agriculture. It is a depression unlike anything I have experienced in 37 years. Frankly, it is probably worse than most people have ever experienced in their lifetimes.

If we did to defense what we are now doing to agriculture and water development in our State and our Nation, if we are doing that to our farmers, then I think if we did that to defense, Gorbachev would be Secretary of Agriculture today.

We can't allow that to happen. We have to understand if we are going to provide a Marshal Plan for agriculture, a Marshal Plan for rural America, then we have to have water development that is equal to the same priority we provide to the other element of our national security; that is, national defense. If there is money for a missile system, there has to be money for an irrigation system. It seems to me that is just as important to our national security in the long run.

So I hope that we understand that. I could understand if the President and if all of those interested in balancing the budget would have come to us and said, "Look, we are going to ask you to take your lumps, but we are asking everybody to take the same number of lumps you are so don't bitch." That isn't what is happening.

What is happening is that we are being told to take an elimination of some of our programs, a cutback that will totally drop a water project in South Dakota in the name of shifting priorities to defense and other things. That is wrong.

There is not a person in this room who doesn't understand the importance of financial security and financial fairness. But there isn't a person in this room who doesn't believe this is as much a part of national security as an MX missile system or anything else.

So I think we have a point to make. Sure, we will take our lumps in the budget. Sure, we will even freeze across the board, if necessary. But we will be darned if we are going to subject every one of our programs to budgetary elimination while the President or someone else will shift those budget dollars into something else.

So that is the message. I commend you for taking a leadership role in the Senate to make that point, to talk about the importance of these projects. I just hope we can do as well in the House of Representatives.

With that, I thank you for the time.

Senator ABDNOR. Thank you, Congressman.

Let me ask you, we all know, and Senator Pressler stated, that dollars are going to be tight, whether we take them out of defense or wherever we take them. Everybody is going to be fighting for the dollars that are available. We will have a tough time over here, too.

How do you think it will be over in the House? Do you think the leadership on the Interior Committee is going to view water development with a real open mind and hope to proceed with it?

Mr. DASCHLE. I think they are going to take a lot of their calls from the President. The President, obviously, with what we saw with the MX and other systems, is in a very good driver's seat here. They want to work together.

I think if we can get the go-ahead from the administration on some of these things, there is a good chance we can pass a bill out of the House. If we don't, if we have to fight the administration, then we are in the same boat you are. It is going to be up to us to make that point and talk about priorities, to talk about fairness, and talk about the budget cuts in a way that is not going to treat one group unfairly at the expense of some other group.

As soon as we determine what kind of priorities we are going to get from the administration on some of this and what help we can get on a bipartisan basis in the House, I think there is a fair chance we can do something very positive.

Senator ABDNOR. Very good. We certainly do have our work cut out for us. However, all three of us believe very strongly in the development of our abundant natural resources.

Senator PRESSLER. I might just add, all of us are going to meet with the administration this afternoon at 2, I believe.

Senator ABDNOR. Yes.

Senator PRESSLER. I think that will be an opportunity, another critical opportunity, to try to get some additional support.

I know some of the previous Secretaries of the Interior have recognized South Dakota's sacrifices, but it seems they change so quickly we have to keep reeducating new ones. So we will be at that again this afternoon.

STATEMENT OF HON. JAMES ABDNOR, U.S. SENATOR FROM SOUTH DAKOTA

Senator ABDNOR. Thank you. Both of you gentlemen, if you would like to come up here, we would certainly welcome you to stay around.

In addition, I want to welcome our guests here today, and those who will be testifying as witnesses. We appreciate the long trip you made. I know you are here because you believe so strongly in these water projects.

We all know the Federal Government has made a commitment to South Dakota. We were promised irrigation development if we would agree to give up over 500,000 acres for dams to provide flood control for the downstream States.

I, and those of you who are here today, join in support of South Dakota's water development. We don't take that commitment lightly. I keep reminding the higher ups in the bureauracy that this has been a commitment that was made 40 years ago, are we are entitled to certain promises that were made when the Pick-Sloan plan was passed. We are dead serious in insisting that the Federal Government live up to its promises to us. We are dedicated to fight for as long as it takes.

Development of our abundant natural resources is a long-term investment in our future. Water development can help to stabilize our family farms and our smalltown main streets. We can't control the weather, and we know what droughts can do to farmers and rural businesses. But water development can take some of the risk out of farming and doing business in South Dakota. Water development can help us to keep more of our young people on the farm and more of our businessmen in our small communities.

These hearings today highlight an essential point. We are united, we are dedicated, and we are determined to pursue water development in a responsible and effective manner. The presence of our entire congressional delegation speaking with one voice on water development demonstrates that point.

That is not to say there is no opposition to any project in our State. Indeed, we will hear of some of the opposition here today. But in any large-scale project, there will be those who disagree. We welcome their input and their ideas.

Before turning to our first witness, though, I would like to note for the record I have requested Chairman Murkowski of the Subcommittee on Water and Power to schedule a field hearing this summer on the Lake Andes-Wagner irrigation project. I intend to pursue a hearing date for the CENDAK project as soon as the necessary documents are completed.

I am hopeful that Senator Murkowski, who has been very cooperative, will be willing to do this.

In addition, I will be working with Chairman Hatfield of the Appropriations Committee to ensure that construction funds are appropriated for the WEB pipeline as well as for the Missouri River Streambank Stabilization Program and for the Belle Fourche irrigation project.

In light of the horrendous Federal budget deficit, we do not mislead ourselves it is going to be easy. It must be our primary responsibility, so we must approach water development in a responsible manner, just like any other program.

For as long as the mighty Missouri River flows through our State, and for as long as the good people of South Dakota long for a better future for our young people, we will not give up the struggle. We intend to see it through in projects like WEB, Lake Andes-Wagner, CENDAK, Belle Fourche, and others which have strong and active local support.

We are fortunate to have you people come in today; we are fortunate to have a united congressional delegation on this; and we are looking forward to our hard work of getting some concrete results.

I have been joined by Senator Mattingly from Georgia, who it is always a pleasure to work with.

Senator Mattingly, it is a long ways from Georgia to South Dakota, but there are many things on which we do think alike. Do you have any comments?

Senator MATTINGLY. No, I have nothing, Mr. Chairman. I appreciate being here at your hearing. I will say it is warmer in Georgia than South Dakota, though.

Senator ABDNOR. Not always, but I will let that go by this time. Thank you. [Laughter.]

Most of the time we might have to agree with you on that.

PREPARED STATEMENT

I have a more detailed statement which I will make part of the record.

[The statement follows:]

STATEMENT OF SENATOR JAMES ABDNOR

FIRST OF ALL, A WARM WELCOME TO ALL OF YOU HERE TODAY.

THE FEDERAL GOVERNMENT MADE A COMMITMENT TO SOUTH DAKOTA. WE WERE PROMISED IRRIGATION DEVELOPMENT IF WE WOULD AGREE TO GIVE UP OVER 500,000 ACRES FOR DAMS TO PROVIDE FLOOD CONTROL FOR DOWNSTREAM STATES.

I--AND THOSE WHO JOIN ME HERE TODAY IN SUPPORT OF SOUTH DAKOTA WATER DEVELOPMENT--DO NOT TAKE THAT COMMITMENT LIGHTLY. WE ARE DEAD SERIOUS IN INSISTING THAT THE FEDERAL GOVERNMENT LIVE UP TO ITS PROMISES TO US. AND WE ARE DEDICATED TO FIGHT FOR AS LONG AS IT TAKES.

IN OUR STATE A MAN'S WORD IS HIS HONOR, AND WE BELIEVE GOVERNMENT SHOULD KEEP ITS WORD, TOO. MOREOVER, IT IS IMPORTANT TO REMEMBER WHAT WATER DEVELOPMENT CAN DO FOR THE FUTURE OF SOUTH DAKOTA.

DEVELOPMENT OF OUR ABUNDANT NATURAL RESOURCES IS A LONG-TERM INVESTMENT IN OUR FUTURE. WATER DEVELOPMENT CAN HELP TO STABILIZE OUR FAMILY FARMS AND OUR SMALL-TOWN MAIN STREETS. WE CAN'T CONTROL THE WEATHER, AND WE KNOW WHAT DROUGHTS CAN DO TO FARMERS AND RURAL BUSINESSES. BUT WATER DEVELOPMENT CAN TAKE SOME OF THE RISK OUT OF FARMING AND DOING BUSINESS IN SOUTH DAKOTA. WATER DEVELOPMENT CAN HELP US TO KEEP MORE OF OUR YOUNG PEOPLE ON THE FARM AND MORE OF OUR BUSINESSMEN IN OUR SMALL COMMUNITIES.

IN FACT, THE BENEFITS FROM THE CENDAK PROJECT ALONE WILL EQUAL NEARLY HALF THE AMOUNT OF THE TAX REVENUES COLLECTED BY THE STATE OF SOUTH DAKOTA! THE NUMBERS ARE $131 MILLION IN BENEFITS FROM CENDAK VERSUS ABOUT $323 MILLION IN TOTAL STATE TAX REVENUES EACH YEAR. FOR LAKE ANDES-WAGNER THE FIGURE IS OVER $13.5 IN BENEFITS TO THE PEOPLE OF OUR STATE -- AND THAT'S EVERY YEAR FOR AS LONG AS THE PROJECT EXISTS. THESE ARE IMPRESSIVE FIGURES.

PARTICULARLY TO A POOR STATE LIKE OURS, WHICH HAS RANKED AS LOW AS 50TH OUT OF ALL 50 STATES IN PER CAPITA INCOME.

WELL, WE ARE ITCHING TO REALIZE THOSE BENEFITS. WE WISH THAT WE HAD BEEN ALLOWED TO HAVE THEM FOR THE LAST 30 YEARS, DURING WHICH TIME OUR DOWNSTREAM NEIGHBORS HAVE ENJOYED THE BENEFITS OF FLOOD CONTROL AT OUR EXPENSE.

BUT WATER DEVELOPMENT IS A LONG-TERM INVESTMENT IN OUR FUTURE AND IT TAKES TIME. THE CENTRAL ARIZONA PROJECT WAS FIRST PROPOSED TO THE CONGRESS IN 1948, AUTHORIZED IN 1968, AND WILL NOT BE COMPLETED UNTIL THE MID-1990'S. THE COLUMBIA BASIN PROJECT IN WASHINGTON STATE WAS PROPOSED IN THE 1930'S AND IS ONLY HALF-CONSTRUCTED TODAY.

THE PATH TO AUTHORIZATION AND FUNDING OF A SIGNIFICANT WATER PROJECT IS LONG AND ROUGH, BUT WE ARE MOVING ALONG. OUR PROGRESS IS SOMETIMES SLOW, BUT NONETHELESS WE ARE MAKING PROGRESS.

TODAY'S HEARING HIGHLIGHTS AN ESSENTIAL POINT: WE ARE UNITED, DEDICATED, AND DETERMINED TO PURSUE WATER DEVELOPMENT IN A RESPONSIBLE AND EFFECTIVE MANNER. THE PRESENCE OF OUR ENTIRE CONGRESSIONAL DELEGATION SPEAKING WITH ONE VOICE ON WATER DEVELOPMENT DEMONSTRATES THAT POINT. AND IT SHOULD BE NOTED FOR THE RECORD THAT OUR LEGISLATURE STRONGLY SUPPORTS DEVELOPMENT OF OUR STATE'S WATER RESOURCES AS WELL.

THAT IS NOT TO SAY THERE IS NO OPPOSITION TO ANY PROJECT IN OUR STATE. INDEED, WE WILL HEAR OF SOME OF THE OPPOSITION HERE TODAY, BUT IN ANY LARGE-SCALE PROJECT THERE WILL BE THOSE WHO DISAGREE. WE WELCOME THEIR INPUT AND THEIR IDEAS.

BEFORE TURNING TO OUR FIRST WITNESS, I'D JUST LIKE TO NOTE FOR THE RECORD THAT I HAVE REQUESTED CHAIRMAN MURKOWSKI OF THE SUBCOMMITTEE ON WATER AND POWER TO SCHEDULE A FIELD HEARING THIS SUMMER ON THE LAKE ANDES-WAGNER IRRIGATION PROJECT. AND I INTEND

TO PURSUE A HEARING DATE FOR THE CENDAK PROJECT AS SOON AS THE NECESSARY DOCUMENTS ARE COMPLETED.

IN ADDITION, I WILL BE WORKING WITH CHAIRMAN HATFIELD OF THE APPROPRIATIONS COMMITTEE TO ENSURE THAT CONSTRUCTION FUNDS ARE APPROPRIATED FOR THE WEB PIPELINE, AS WELL AS FOR THE MISSOURI RIVER STREAMBANK STABILIZATION PROGRAM AND FOR THE BELLE FOURCHE IRRIGATION PROJECT.

MY EFFORTS THIS YEAR ARE A CONTINUATION OF MY LONG-WAGED BATTLE FOR WATER DEVELOPMENT IN OUR STATE UNDER THE PROMISE AND THE COMMITMENT OF THE PICK-SLOAN MISSOURI BASIN PROGRAM. IN LIGHT OF THE HORRENDOUS FEDERAL BUDGET DEFICIT, WE DO NOT MISLEAD OURSELVES THAT IT WILL BE EASY. WE ARE NOT ABOUT TO GIVE UP AND THROW IN THE TOWEL, THOUGH.

FOR AS LONG AS THE MIGHTY MISSOURI FLOWS THROW OUR STATE--AND FOR AS LONG AS THE GOOD PEOPLE OF SOUTH DAKOTA LONG FOR A BETTER FUTURE FOR OUR YOUNG PEOPLE--WE WILL NOT GIVE UP THE STRUGGLE. WE INTEND TO SEE IT THROUGH IN PROJECTS LIKE WER, BELLE FOURCHE, LAKE ANDES-WAGNER, CENDAK, AND OTHERS WHICH HAVE STRONG AND ACTIVE LOCAL SUPPORT.

WE ARE FORTUNATE TO HAVE SENATOR PRESSLER, CONGRESSMAN DASCHLE, BOB NEUFELD FROM THE SOUTH DAKOTA DEPARTMENT OF WATER AND NATURAL RESOURCES; THE LAKE ANDES-WAGNER, BELLE FOURCHE, AND CENDAK IRRIGATION DISTRICTS; THE MISSOURI RIVER STABILIZATION ASSOCIATION; AND MEMBERS OF THE UNITED FAMILY FARMERS AND CONCERNED ENVIRONMENTAL GROUPS.

WITH THAT, THE COMMITTEE WELCOMES ALL OF OUR WITNESSES TODAY. SENATOR PRESSLER, WOULD YOU LIKE TO BEGIN.

PREPARED STATEMENT OF WARREN NEUFELD, SECRETARY, SOUTH DAKOTA DEPARTMENT OF WATER AND NATURAL RESOURCES

Senator ABDNOR. I think our first witness from South Dakota was going to be Secretary Warren Neufeld. I hate to admit this, because we have had some beautiful weather. Nevertheless, this weekend a blizzard hit from the west. They always bring it in from the west, and we got touched by it. I think Mr. Neufeld got caught up in the weather and is stuck in Minneapolis.

I ask unanimous consent that his statement, when received, be made a part of the record.

[The statement follows:]

STATEMENT OF WARREN R. NEUFELD, SECRETARY, SOUTH DAKOTA DEPARTMENT OF WATER AND NATURAL RESOURCES

Mr. Chairman and members of the Subcommittee, my statement today will be brief and to the point: We are willing at the state level to fund legitimate water development activities while simultaneously exercising fiscal responsibility, and now it is time for Congress to do likewise. The State of South Dakota recognizes that everyone must help to reduce the federal deficit, and consequently we are not asking for anything more than that requested by President Reagan in the proposed FY 1986 budget. Given these budgetary limitations, however, we do expect to be treated fairly in relation to all other states. We are willing to accept the hard decisions that must be made to balance the federal budget, but we will oppose any attempt to balance the budget on the back of South Dakota - already one of the states least able to bear a disproportionate burden.

Within the State of South Dakota, we have clearly established our water project priorities and allocated our scarce financial resources accordingly. Concurrently, local water project sponsors have demonstrated uncommon commitment to pursuing their objectives by contributing a substantial share of the costs of project investigation efforts to date. The local project sponsors with me here today should be commended for their responsible actions. The State and local sponsors have done their part, and we have for the most part gone as far as we can go. We have prepared ourselves to move forward, and it is time for the federal government to honor its commitment to South Dakota with hard support for water resources development authorization and dollars.

In particular, approximately $1.5 million in state and local funds have been utilized to prepare the Lake Andes-Wagner irrigation project for actual construction. Now that the final planning report has been completed and project feasibility has been demonstrated, there is nothing else that we can do except wait for Congressional action. The Lake Andes-Wagner project is one of the best new irrigation proposals in the Missouri Basin. If we cannot proceed with the Lake Andes-Wagner project, it will be necessary to question the future of the entire reclamation program. We are not asking for a federal subsidy to produce surplus crops. We are simply asking for an opportunity to share in the water development benefits provided to other states. In view of our historical contribution to the Pick-Sloan Missouri Basin program, and our willingness to share development costs, we only request equitable treatment. Congress must recognize its responsibility and must act on the Lake Andes-Wagner authorization legislation (S. 252) as soon as possible this year. Also, within the final FY 1986 budget that Congress adopts, we urge you to consider providing funds for Lake Andes-Wagner development to the extent fiscally possible and consistent with Congressional action on project authorization legislation.

The CENDAK irrigation project local sponsors have likewise shown great diligence and willingness to share project study costs. Between the state and local sponsors, over $1.5 million has been provided to complete a project planning report. Further, the CENDAK local sponsors initiated legislation that was just approved last month by the South Dakota State Legislature enabling the establishment of the CENDAK Irrigation District. The CENDAK Irrigation District will only include those landowners interested in irrigating, and only those landowners will be subject to water service repayment requirements. The CENDAK project concept is unique in the special attention it provides to the interrelationship between energy and water conservation. The project is critical to stabilize the livestock industry in drought prone central South Dakota and thereby stabilize the overall regional economy. Further, the CENDAK project provides an excellent opportunity to put to beneficial use the considerable sunk investment associated with the authorized but now dormant Oahe project.

While the CENDAK planning report is nearly complete, and the project apparently is feasible, much work remains to be done. We support the Reagan Administration's proposed FY 1986 budget request of $1.775 million for CENDAK advanced planning efforts. These funds are essential to conduct the federally required technical investigations of such issues as drainage and wildlife mitigation. It should be emphasized quite clearly, however, that the CENDAK

study is a cooperative effort based on a three-party agreement involving the U.S. Bureau of Reclamation, the State of South Dakota, and the CENDAK local sponsors. As such, the utilization of the advanced planning funds should be determined in accordance with the concerns of the federal and non-federal study partners.

The Belle Fourche local sponsors also deserve credit for their dedication. The Belle Fourche Irrigation District has entered into a new repayment contract with the Bureau of Reclamation, and we are ready to proceed with the project. Previous federal planning reports have indicated that $2.5 million could be utilized in FY 1986 to initiate Belle Fourche rehabilitation efforts, and we concur with this estimate. We are not asking for additional Belle Fourche funding at this time, however, due to current federal budget problems. Instead, we are simply asking for authority to utilize any future funds that might become available through reprogramming or any other budgetary adjustments to begin actual rehabilitation work. It should be emphasized that unlike a new project, any annual investment in the Belle Fourche project will result in direct and immediate benefits because each incremental investment in the Belle Fourche water delivery and distribution rehabilitation and improvement will increase overall project efficiency. The Congress need not fear that initiation of work on Belle Fourche must lead inexorably to future spending to avoid sunk costs without benefit since each incremental expenditure will produce discrete and independent benefits. We believe that other projects in other states have been more than adequately funded in the proposed FY 1986 budget, and we are simply asking you to provide authority for Belle Fourche reprogramming as you make the final FY 1986 funding decisions.

The WEB water supply project is another fine example of local support for local projects. Approximately $2.4 million has been provided to date by the WEB local sponsors and the state to fund construction of the project. Also, the state in 1983 issued a $17 million interim financing note for the purpose of reducing interests costs during project construction. We fully support the Administration's proposed FY 1986 budget request of $18 million for further WEB construction progress.

We support the Administration's proposed FY 1986 budget request for the Corps of Engineers' anticipated activities in South Dakota with one minor revision. We would like for $100,000 of the $582,000 requested for the Eastern and Western South Dakota Studies to be included directly in the USGS budget as a line item (preferred) or that the Corps be authorized to transfer $100,000 of this appropriation to USGS (as done for the past 2 fiscal years) to be utilized in continuing the on-going Big Sioux hydrology study. The Big Sioux study is a critical priority for the state and this revision will allow current study progress to continue, while staying within the Administration FY 1986 budget request.

In summary, we generally support the Administration's budget request for FY 1986 water resource activities in South Dakota. We could request additional and direct appropriations for such activities, but are unwilling to do so given current federal budget problems. We again remind this Committee of the federal commitment to South Dakota in conjunction with the Pick-Sloan Missouri Basin program, and we only ask for equitable treatment.

SUPPORTING RESOLUTIONS

Senator ABDNOR. I, additionally, want to make a part of the record three South Dakota House concurrent resolutions that were passed by both the legislature in support of the Lake Andes-Wagner, CENDAK, and Belle Fourche irrigation projects.

I will ask unanimous consent to do that.

[The resolutions follow:]

HOUSE CONCURRENT RESOLUTION NO. 1018

A CONCURRENT RESOLUTION, Requesting the United States Congress to adopt legislation and to appropriate funds for authorization and construction of the Lake Andes-Wagner Irrigation Project.

WHEREAS, it is the policy of the State of South Dakota that its government and citizens conserve, develop, manage and make optimum use of the state's water resources; and

WHEREAS, the Flood Control Act of 1944 (P.L. 534) provides for containment and development of Missouri River waters for the beneficial use of South Dakota citizens; and

WHEREAS, the agricultural economy of South Dakota is highly dependent on stable and plentiful sources of water; and

WHEREAS, the Lake Andes-Wagner water project is a locally initiated and supported multipurpose project that would serve the water needs of many South Dakotans; and

WHEREAS, the State of South Dakota has included the Lake Andes-Wagner project as one of its highest priority water projects in its state water plan; and

WHEREAS, the Lake Andes-Wagner project would provide major benefits to the state and the nation; and

WHEREAS, legislation is being introduced during the First Session of the Ninety-ninth Congress to authorize the Secretary of the Interior to construct, operate and maintain the Lake Andes-Wagner project:

NOW, THEREFORE, BE IT RESOLVED, by the House of Representatives of the Sixtieth Legislature of the State of South Dakota, the Senate concurring therein, that the United States Congress is requested to take prompt legislative action to authorize and appropriate the funds necessary for the development and construction of the Lake Andes-Wagner project.

Adopted by the House of Representatives, February 27, 1985
Concurred in by the Senate, March 2, 1985

HOUSE CONCURRENT RESOLUTION NO. 1020

A CONCURRENT RESOLUTION, Requesting that the United States Congress adopt legislation to appropriate the money authorized for the Belle Fourche Irrigation Rehabilitation Project.

WHEREAS, it is the policy of the state of South Dakota that its government and citizens conserve, develop, manage and make optimum use of all of this state's water resources; and

WHEREAS, the agricultural economy of South Dakota is highly dependent on stable and plentiful sources of water; and

WHEREAS, the Belle Fourche Irrigation Rehabilitation Project is a locally initiated and supported project that would serve the water needs of many South Dakotans; and

WHEREAS, for the state of South Dakota the Belle Fourche Irrigation Rehabilitation Project is one of the highest priority water projects; and

WHEREAS, the Belle Fourche Irrigation Rehabilitation Project will provide major benefits to the state and nation; and

WHEREAS, the Congress has authorized the rehabilitation of the Belle Fourche Irrigation District but has failed to appropriate the $2,400,000 scheduled for this year:

NOW, THEREFORE, BE IT RESOLVED, by the House of Representatives of the Sixtieth Legislature of the state of South Dakota, the Senate concurring therein, that the United States Congress is requested to take prompt action to appropriate those funds necessary to begin the rehabilitation of the Belle Fourche Irrigation District; and

BE IT FURTHER RESOLVED, that the Chief Clerk of the House of Representatives of the state of South Dakota forward copies of this resolution to the members of South Dakota's congressional delegation.

Adopted by the House of Representatives, February 27, 1985
Concurred in by the Senate, March 2, 1985

HOUSE CONCURRENT RESOLUTION NO. 1013

A CONCURRENT RESOLUTION, Requesting that the United States Congress adopt legislation and an appropriation for authorization and construction of the CENDAK project.

WHEREAS, it is the policy of the state of South Dakota that its government and citizens conserve, develop, manage and make optimum use of all of this state's water resources; and

WHEREAS, the Flood Control Act of 1944 (P.L. 534) provides for containment and development of Missouri River waters for the beneficial use of South Dakota citizens; and

WHEREAS, the agricultural economy of South Dakota is highly dependent on stable and plentiful sources of water; and

WHEREAS, the CENDAK water project is a locally initiated and supported multipurpose project that would serve the water needs of many South Dakotans; and

WHEREAS, the state of South Dakota has included the CENDAK project as one of the highest priority water projects in its state water plan; and

WHEREAS, the use of modern technologies for water and energy conservation will enhance and stabilize the regional economy; and

WHEREAS, the CENDAK project would provide major benefits to the state and nation; and

WHEREAS, legislation has been introduced (S 253 and H.R. 583, 99th Congress) to authorize the Secretary of Interior to construct, operate and maintain the CENDAK project:

NOW, THEREFORE, BE IT RESOLVED, by the House of Representatives of the Sixtieth Legislature of the state of South Dakota, the Senate concurring therein, that the United States Congress is requested to take prompt action to authorize and appropriate the funds necessary for the development of the CENDAK project.

Adopted by the House of Representatives, February 27, 1985
Concurred in by the Senate, March 2, 1985

LAKE ANDES-WAGNER PROJECT, SOUTH DAKOTA

STATEMENT OF MARC GOLDHAMMER, LAKE ANDES-WAGNER WATER SYSTEMS, INC.

Senator ABDNOR. At this time, I will call Marc Goldhammer forward to testify on the Lake-Andes Wagner project.

I don't know who will be joining you, Marc, but whoever wants to come up is certainly welcome.

Marc, we welcome you to the committee today. We know how dedicated you are and the long hours, months, and years you have been working on this. We are getting closer and closer, so we are anxious to hear your statement.

Mr. GOLDHAMMER. Thank you, Senator. It is a pleasure to be here and meet with you again.

Although I am here at the table alone, I do have some very hard-working people with me today sitting in the audience behind me. We certainly have a dedicated group of farmers at home that are very anxiously awaiting continued development of our project.

My name is Marc Goldhammer. I am manager of the proposed 45,000-acre Lake Andes-Wagner irrigation project. I have been a farmer for over 35 years and understand how drought and low production can put a farmer out of business in these stressful times.

On February 25 and 26, 1985, Governor Janklow and the entire legislature from South Dakota traveled to Washington, DC. to bring the agriculture crisis to your attention. Much of this crisis came from the drought of 1976 and 1977 and again in 1981 and 1982. In 1984 there was a flood disaster with much crop and property lost in South Dakota.

This irrigation project could have helped both situations with the good water available from Lake Francis Case and the drainage system planned for the project.

The Lake Andes-Wagner plan has been a 35-year local dream and a Federal promise since the Pick-Sloan plan was born.

This time, after numerous attempts, the local people are determined to build the project and improve local conditions. The local people and the State of South Dakota have contributed $1.5 million to supplement the Bureau of Reclamation funds of $450,000 to complete the planning report and draft environmental statement.

The $1.5 million was used to accelerate the Bureau of Reclamation study process. We take pride in the fact that because of the accelerated schedule we have been able to maintain local interest and continuity supporting the project. At this point in time, we are preparing for fiscal year 1986.

With authorization legislation pending approval in fiscal year 1985, we have a critical need to implement the preconstruction phase of our project as planned. The $900,000 needed has been cut from the fiscal year 1986 budget.

Those of us who support the Lake Andes-Wagner irrigation project respectfully ask the committee to support the reinstatement or a redirection of funds for the preconstruction phase and, conditionally, these funds could only be expended after formal authorization. The local land-

owners who intend to irrigate are depending on the board of directors to keep the schedule as outlined in the beginning, which called for construction to begin in fiscal year 1987.

We cannot afford to have fiscal year 1986 a do-nothing, wasted year. The need has never been more critical than right now to place a feasible irrigation project in this semiarid region of South Dakota, which has favorable local, regional and national economic benefits. Your support for this long promised and needed water project is much appreciated.

All of the people in Charles Mix County thank you for hearing our problems on the Lake Andes-Wagner project.

ADDITIONAL SUPPORTING STATEMENTS

Senator ABDNOR. Thank you, Mr. Goldhammer. Do you want the other statements placed in the record?

Mr. GOLDHAMMER. That would be our hope, because we included in that packet our endorsements and local support for our total project. People with much expertise have contributed to that packet. So, respectfully, I ask for it to be placed in the record.

Senator ABDNOR. Without objection, supporting statements will be made a part of the record. We want this kind of valuable information and testimony to be a part of our record.

[The statements follow:]

STATEMENT OF ROLAND CRISMAN, CHAIRMAN, LAKE ANDES-WAGNER IRRIGATION DISTRICT, SOUTH DAKOTA

I am Roland Crisman, Chairman of the Lake Andes-Wagner Irrigation District, and a farmer within the Irrigation District. We own and lease about 1400 acres, not all within the district. My son John is farming with me, trying to get a start. I have lived on a farm all my life, except for the two years I served in the U.S. Marines. I have seen quite a change in farming during my life, from horse farming to the operation of today.

I have served on the Irrigation Board since it was formed in 1969. We formed a Board and District after the Bureau of Reclamation had studied our area in the late 1950's. In 1964 they presented a report on 40,000 acres. There was no local input in the study and it faltered. We were involved with a Bureau study in 1969 when the Office of Management & Budget cut federal funds. We hired a private study, but it was too costly.

In 1981 the Bureau of Reclamation made an informal study and Governor Janklow included our project in his State Water Plan. Since then we have been in an accelerated study with the Bureau of Reclamation and the State of South Dakota Water Resource personnel. We have been cost sharing the study to keep it moving. We have received our Planning Report and Draft Environmental Statement.

The next step is to get authorization for the Lake Andes-Wagner Irrigation project, which is why we are here. Then we need funding for preconstruction, which we hope to receive. I understand it was in the budget, but was cut.

In the days of the construction of Fort Randall Dam, the people of the community were told that the Pick-Sloan Plan had a three-fold plan - Power, Recreation, and Irrigation. I have seen the power and recreation, but what has been done with the irrigation part of the plan? Is the government trying to forget this part?

We have been in a wet cycle in our area the last several years, sometimes too wet. But in my life, it seems as though if we get one fair crop in three years we are quite fortunate. We feel that we have our Planning Report completed. We ask the U.S. Congress to help us see that our irrigation project is completed and that our dream of irrigation, as promised by the Pick-Sloan Plan, become a reality.

STATEMENT OF LYLE LABEREE, MANAGER, SOUTHERN MISSOURI WATER DEVELOPMENT DISTRICT

My name is Lyle Laberee and I am the manager of the Southern Missouri Water Development District.

The Southern Missouri Water Development District consists of Bon Homme, Brule, Buffalo, Charles Mix, Douglas, and Gregory Counties, and a small portion of Lyman County. The Southern Missouri Water Development District strongly supports the Planning Report and feels that it is imperative that Congress authorize the Lake Andes-Wagner Irrigation project and that advance planning to be carried out by the Bureau of Reclamation be funded, so we can move forward with irrigation development in South Dakota.

The State of South Dakota gave up 500,000 acres of land back in 1944 to protect our downstream neighbors from flooding. The federal government promised us nearly a million acres of irrigation. To date, we have not seen this promise fulfilled. The funding for preconstruction and authorization of the 45,000 acre Lake Andes-Wagner Unit as part of the Pick-Sloan Plan would be a start.

The landowners in the project area and the State of South Dakota have invested over one and one-half million dollars to get the project where it is today. We have strong local support and a very active local leadership in trying to get this project started.

Authorization and funding for preconstruction give the federal government an opportunity to keep part of earlier promises and restore the faith of the local people and the State of South Dakota, since we are entitled to irrigation as part of the Pick-Sloan Plan.

We feel that planners with the Bureau of Reclamation had some restraints in their planning process, so the plan is rather conservative in showing benefits. My directors, the directors of the Lake Andes-Wagner project, and I, all feel that if crop production through irrigation were stabilized, we would see increased livestock numbers. With an adequate feed base, we would see additional feeders coming into the area. Also, we feel that wildlife will be enhanced more than is reflected in the Planning Report. For example, last year was the first time in twenty years that Red Lake had water in it. Completion of the project would provide water every year. Also, the lake of Lake Andes would have an opportunity for receiving water that it has never had before. In addition, the wetland areas to be acquired would have water. Without the project there are many years when Lake Andes is dry, along with the wetlands. Waterfowl do not do well without water.

The directors of the Irrigation District and Lake Andes-Wagner Water Systems are very pleased with the cooperation they have received from the Bureau of Reclamation and the State of South Dakota. By working together we have been able to make a number of changes to make a better project and more acceptable to the local citizens and environmental concerns. To name a few of these important changes, we have re-located the main pump site, changed canal routes, and changed relift pump sites.

My directors and I have come through the "dirty thirties", and have seen the heart break of farmers (and businessmen) many times during drought cycles. In South Dakota we have excellent soil for irrigation, but far too often Mother Nature does not provide enough moisture. A large part of our economy depends on a cash crop, and with no crops due to lack of moisture, farms are in a real disaster. A greater disaster results when the farm enterprise has a combination of crop and livestock income and during dry cycles livestock herds have to be sold due to lack of feed. The last few years rainfall has been above normal, thank God; for with the high operating costs farmers have today, they cannot stand a drought. A lot of farms are going under without a drought.

When these dry cycles hit, the whole economy suffers. In addition to the economy of the state suffering, the application of soil conservation practices also comes to a halt. During dry years the farmers have all they can do to come up with financial resources to feed their families and frequently have to sell some of their assets to meet their financial obligations.

In 1976 during a dry cycle, my office was flooded with requests for assistance in developing irrigation. The problem farmers seem to have is that they wait until they have a crop failure before they try to start irrigating. This is why the Lake Andes-Wagner Irrigation project has to be developed now. We do not know when the dry cycle will come again, but we have to be ready. The sooner the project can be constructed, the sooner the area, the State of South Dakota, and the nation will have insurance that we will have adequate feed to maintain the livestock herds.

Nearly every summer crop yields suffer due to lack of moisture. During the latter part of July and early August, we have hot southerly winds that make crops wilt and yields go down. Not every year is a crop failure, but nearly every year yields are reduced.

This project has been in various stages of planning for over 30 years. The local people are ready. It is high time Congress funds preconstruction planning and authorizes this project.

STATEMENT OF ALBERT KOCER, SOUTH DAKOTA STATE REPRESENTATIVE

My name is Albert Kocer and I am a South Dakota State Representative, representing Legislative District 20 which includes Aurora, Brule, Buffalo and Charles Mix Counties in South Dakota. I should note for the record that the Lake Andes - Wagner Irrigation Project is included within the legislative district that I represent.

I am submitting this testimony to the subcommittee on behalf of the Lake Andes - Wagner Irrigation Project. I sincerely hope that as a result of this hearing here today, we will see Water Development in the State of South Dakota move forward in a very positive direction. For too long the State of South Dakota and the Federal Government have talked about Irrigation Projects within this state, using Missour River Water, and as of yet, have been unable to develop these projects.

I have lived in the Wagner Community (which is included in the proposed Irrigation Project) all of my 54 years. Born and raised on a farm, I spent 15 years raising my family on a family farm before I established my own farm supply and tractor salvage business in the city of Wagner. My wife and I own and operate this same business yet today. We have three daughters and I am sorry to have to say that two of these have chosen to leave the State of South Dakota because of the state's economic and low income conditions that dominantly prevail in the Lake Andes, Wagner area. This is primarily due to our lack of rainfall, a uncontrolable resource which remains unpredictable and causes this area to suffer from frowth a majority of the years.

I have been Prime Sponsor in changing South Dakota Legislation to help form a Irrigation District within a District and have also sponsored legislation to enhance the Lake Andes - Wagner Irrigation Project. Such legislation has passed both sides of the South Dakota Legislature with a unanimous vote. Also, the South Dakota House and Senate, has passed resolutions to our U.S. Congress and U.S. Senate, for urging for the funding of the Lake Andes Water Project. I believe this speaks well for South Dakotas support for a Irrigation Project.

Charles Mix County, where the Lake Andes - Wagner Irrigation Proposal is located, has tried for 40 years to get the Federal Government to fulfill its promises. Over the last 30 years, I have had many occassions to talk to the people in the area about when the

Government came in to buy land for the Fort Randall Dam. The people that were acquiring the prime farm land that is now covered by the waters of Lake Francis Case, told the people that owned the land, that the project would provide flood control, which it does; provide low cost power, which is not the case. The Lake Andes - Wagner area has one of the highest utility rates in the state. They also said it would provide for large amounts of irrigation. There are a few irrigation projects on the riversides but very little real irrigation or water development. Large amounts of the property in the area are non-taxable: Federal Lands, Indian Trust Land, and individual Indian Land. This causes many hardships in school districts, county government, township government and the municipalities.

Over half of the 9,600 people in Charles Mix County are classified as poor and low income. There are no job opportunities so the young people are leaving for the big cities to make a living. We have no railroads because of the poor crops and not enough traffic to make a railroad pay.

The economic benefits from the Lake Andes - Wagner Irrigation Project could not only benefit the immediate area surrounding the project, but could lend economic stability to South Dakota's primary industry - Agriculture. Irrigation could mean the difference between paying the bills or bankruptcy, between having some families living on the verge of poverty or living comfortably, and finally, it could mean the difference between having some healthy small communities or watching small town businesses disappear. An irrigation project such as the Lake Andes - Wagner Irrigation Project, would be a great help to the State of South Dakota. For example, we see it to be a viable means for generating extra Sales Tax Dollars for the State. These extra sales tax dollars would come from the extra income realized through irrigation.

Please note also that increased crop production must be tied to programs which provide for a strong market for cash crops.

Again, I would like to stress the importance of this Lake Andes - Wagner Irrigation Project to the County and State of South Dakota.

1. To provide a stable economy for an area that has given much in the name of progress.

2. To provide jobs and promote agriculture-related industry to keep our young people in the community.
3. To keep the people off of welfare and to provide farming for the people on the reservation with some opportunity of being able to make a decent living.
4. To get the Federal Government out of their lives and establish independent living standards to take pride in themselves.

The people in the area of the proposed Lake Andes - Wagner Irrigation Project have made a significant contribution to get the project started. They are paying for an $850,000 dollar bond issue on the project for studies and pre-construction costs. They also received a $450,000 dollar loan from the State of South Dakota, for more plans and studies.

Members of the sub-committee, I want to impress on you that as a State Representative who has served in the South Dakota House of Representatives for nine years, I have been close to the problems in this area and I really believe that the people of this area have waited forty years for some real water development that was promised to them.

The Lake Andes - Wagner Irrigation Project has the potential to succeed if we do not overburden the local farmer or rancher with repayment costs that are out-of-line. In addition, the economic benefits from this project are critical to the future of the Legislative District which I serve, as well as to the State of South Dakota as a whole. If reasonable cash crop prices are maintained, their investment will return future dividends for all our people.

We the people in the project area, want it. We have worked hard and spent a great deal of money to get it. I would sincerely hope that this sub-committee would "Recommend" it to the rest of the Congress of the United States.

Thank you.

STATEMENT OF JOHN T. LOUCKS, PRESIDENT, UPPER MISSOURI WATER USERS ASSOCIATION

As President of the Upper Missouri Water Users Association comprised of water users in Montana, North Dakota, South Dakota, and Wyoming, I request that you include this statement in the record of hearings for the Lake Andes-Wagner Irrigation Project. I fully appreciate the fact that each and every water use proposal in the Missouri River Basin in our area merits your most sincere review.

The 78th Congress of the United States undertook the task of taming the Missouri River. The Pick-Sloan Missouri Basin Program endorsed a plan to provide the states within the Missouri River Basin a means to put to beneficial use this water resource. To the downstream states the Program put an end to the fear of yearly spring floods with the accompanying devastation of personal property and inundation of fertile bottom lands. In addition, downstream development has become a byproduct of the Basin Plan. While the downstream states are benefiting, what has the program accomplished for the upstream states and in particular South Dakota? South Dakota received a permanent flood on over 500,000 acres of fertile river bottom lands.

South Dakotans should not have to wait any longer for promises to be fulfilled. Droughts have a disastrous effect and have crippled agriculture within our state. In contrast to the national average of 3 percent, over 20 percent of South Dakota's income is generated by farming and ranching. Each drought triggers an economic tailspin that costs not just us, but taxpayers nationwide.

South Dakota is totally underdeveloped in terms of Missouri River water. Three percent of South Dakota's crop acreage is irrigated. South Dakota could double its irrigation or stop altogether and it would have no noted impact on national grain surpluses. Increased irrigation in the State generates local economic activity that would be very beneficial to the agricultural sector. The acres irrigated privately along the Missouri River have shown a large increase in gross dollars spent and returned compared to nonirrigated acres.

The State of South Dakota and the local sponsors of the Lake Andes-Wagner Project have expended approximately 1.5 million dollars toward development of the irrigation project. These funds were used toward the completion of a master plan and a final feasibility report. This clearly demonstrates that the people of South Dakota have established water project priorities. The local people have demonstrated a commitment to pursuing the completion of the project. All we need is the federal commitment and the Missouri River Basin Program will begin to function for South Dakota as planned.

In closing, I would add that I believe it is time for the citizens of South Dakota to receive the benefits promised 40 years ago. I urge this committee to honor the promises made and the effort of those people dedicated to water development by acting favorably in your review of the Lake Andes-Wagner Project.

STATEMENT OF LEO HOLZBAUER, CHAIRMAN OF THE BOARD, LAKE ANDES-WAGNER WATER SYSTEMS, INC.

My name is Leo Holzbauer and I am Chairman of the Board of Directors of Lake Andes-Wagner Water Systems, Inc.

In order to speed up the planning of our irrigation project, a group of my neighbors and friends decided to form a non-profit corporation. In the spring of 1983, Lake Andes-Wagner Water Systems, Inc. was incorporated. The irrigation District gave us full support to act as a liasion group to contact landowners and operators, informing them of progress and receiving local input for the Planning Report/ Draft Environmental Statement. We met 32 times as a Board in 1984. We spent over 2080 hours assisting our neighbors with their concerns and needs before the Planning Report was finalized.

We also were instrumental in securing $500,000 in State of South Dakota monies to accelerate the planning process.

I can still hear my parents talking about the terrible floods, which lives were lost. Terrific amounts of property damage occurred in South Dakota, and also number of down stream states, before the dams were constructed on our Missouri River.

At the same time, Dad hated to see the thousands of acres of good river bottom land that was lost. The productivity that would have been taken off of this land, gone forever, when the dams were constructed.

At the same time, the Bureau of Reclamation has promised the State of South Dakota, the Pick-Sloan Plan, the water that was collected behind these large dams, and the hydro-electric power revenue that the dams created, would be spent back in the State of South Dakota for irrigation projects.

When I was in grade school my parents talked about the bountiful future that the Pick-Sloan Plan guaranteed their children. I now have children in high school, and this promise has yet to be fulfilled. What promises can my wife and I tell our children? Or, do they have to wait and tell this promise to my grandchildren?

The need for preconstruction funding or redirection of funds in the Bureau of Reclamation budget for 1986 is urgent to meet the promises to our area. We are confident that the United States Congress, in their infinite wisdom, will authorize the Lake Andes-Wagner Irrigation project in fiscal year 1985. We are confident that some funding can be made available to us for preconstruction planning.

RESOLUTION OF WAGNER (S. DAK.) ROTARY CLUB

WHEREAS, the Lake Andes-Wagner Water Systems, Inc. is attempting to fund, construct, maintain, and operate the Lake Andes-Wagner Water Systems, Inc., an irrigation project, hereafter referred to as Project, for the purpose of providing water for irrigation and drainage facilities for a large area in Charles Mix County, South Dakota; and,

WHEREAS, the Wagner, Charles Mix County, South Dakota area is heavily dependent on agriculture and that good crops are an important element in making the local agricultural economy strong and vibrant; and,

WHEREAS, the Project would serve to guarantee a constant, useable source of water for irrigating many thousands of acres, and drain thousands of other acres, thereby increasing the productivity of the local area, and providing stability for our farmers; and,

WHEREAS, the Project would bring economic development and potential to the local area, and the State of South Dakota, including the creation of jobs, thereby offering a chance for young South Dakotans to remain in the State; and,

WHEREAS, the Board of Directors of the Wagner Rotary Club, by action taken March 27, 1985, unanimously recognize the strong potential and importance of the Project for our community, County and State; be it hereby,

RESOLVED, that the Wagner Rotary Club is in fully support of the Lake Andes-Wagner Water Systems, Inc., and the Project above described; and that the Wagner Rotary Club urges the Congress of the United States to immediately fund the Project.

WAGNER ROTARY CLUB:

Harvey Weisser, President — C. R. Juffer, Director

David Isebrands, Vice-President — R. W. Honke, Director

Kendall Rehwaldt, Secretary — Roger Wiltz, Director

STATEMENT OF DANIEL PARK, PRESIDENT, LAKE ANDES (S. DAK.) CHAMBER OF COMMERCE

In regard to the Lake Andes/Wagner unit irrigation project, I have received the planning report and draft environmental impact statement.

The Lake Andes Chamber of Commerce would like to go on record stating we are in favor of the planning report and the draft environmental impact statement. We are asking for early authorization and preconstruction funding so that the local sponsors can keep on schedule and maintain local interest.

STATEMENT OF LARRY G. SCHACHT, PRESIDENT, ANDES STATE BANK, SOUTH DAKOTA

I advise, herewith, that I am still keenly interested in the Lake Andes-Wagner irrigation project as I have been for years. Our community is of the same mind in this project and wish to see it come to pass.

I have reviewed the planning report and draft environmental statement and concur with the majority of the findings.

I wish to urge early authorization and preconstruction funding for this project. It will serve to keep local interest at its present high peak. We have waited many years since construction of the mainstem dams to see the Pick-Sloan plan come to fruition for South Dakota. By authorization and funding of this project Congress will keep their past promises to our great State and people.

I hope I have assisted this cause in some way as I feel it is a vital project for the area and the State.

STATEMENT OF D.R. JUFFER, PRESIDENT, COMMERCIAL STATE BANK, WAGNER, S. DAK.

This statement of support for the Lake Andes-Wagner irrigation project comes with my greatest wish for success. The stabilization of the area economy for the agri-business persons will provide reasonable growth and productivity for producers, retailers, and consumers. The project area has been promised irrigation for a number of years. With the studying and valid project proposed, we readily support this project.

The local people have generated hundreds of thousand of dollars every year to pay for the studies. This financial support has not come very easy in the farm economy but the dedication to the project make the sacrifice worth every effort.

Once again, the support of the Lake Andes-Wagner irrigation project comes with a very strong local support. We would appreciate any consideration. Thank you for your time and effort.

STATEMENT OF GREGG BUCHE, PRESIDENT, WAGNER (S. DAK.) CHAMBER OF COMMERCE

The Wagner Chamber of Commerce supports the project. The chamber feels that the irrigation of the dry South Dakota would benefit a large and diverse area of commerce. The wholesalers, retailers, suppliers, and consumers will feel positive effects of the project.

The public support has been shown through the funding and support of studies for which the customers of the Wagner area have paid hard-earned money.

The support of the project comes from the whole chamber of commerce. We hope that this statement finds some help and assistance to our project. Thank you for any and all assistance.

STATEMENT OF BRIAN WEISSER, PRESIDENT, WAGNER (S. DAK.) JAYCEES

I, as president, and Jaycee members, are strongly in favor of the proposed Lake Andes-Wagner irrigation project. There has been much conflict that we know of trying to get this project passed through legislation. Now is the time to get the issue passed and agriculture back on the rise again.

Drought is one of the major causes to slow down our agriculture. Everybody living in South Dakota knows this State is 100 percent agricultural related. This would boost the State's economy as a whole, providing more jobs for everyone, especially keeping our young people at home. We are in a prime area to have a project like this. More factories would be built to handle the products we would produce. The prices for crops would be better due to irrigation. Landowners would irrigate for insuring crops.

This area has the American farmer and the water, the two primary needs to assure a better place to live. The word "irrigation" has many definitions we can define by getting this project on the move. Most of all, put pride back into farming in general.

MEMORANDUM OF PLANNING AND DEVELOPMENT, DISTRICT III, YANKTON, S. DAK.

To: Members of Subcommittee on Energy and Water Development
From: Tom Callan, Chairman
Subject: Lake Andes/Wagner irrigation project
Date: March 27, 1985

On behalf of the local elected officials in southcentral South Dakota, I strongly urge the subcommittee members to reinstate the $900,000 in preconstruction funds for the Lake Andes/Wagner irrigation project.

The elements of planning, financial commitment, and local support are in place for this project. A delay in preconstruction financing would needlessly delay the construction of this irrigation project.

As you are aware, the agricultural economy is depressed and South Dakota has been among the hardest hit. It is vital that our area be allowed the opportunity to stabilize crop production in order to mitigate the bust and boom economics of our region.

Your continued support and financing of the preconstruction phase of the Lake Andes/Wagner project is necessary, needed, and certainly proper.

Thank you in advance for your consideration in this matter.

ENVIRONMENTAL IMPACT STATEMENT AND PUBLIC HEARINGS

Senator ABDNOR. The draft environmental statement was released and was favorably reported. The statement is now on file with EPA and other Federal and State agencies as required by law. If no problems arise, the Interior Department will be able to report to the committee by October. At least, we are going to keep encouraging them to do just that. We hope we can be successful on the $900,000.

Let me ask you, what issues do you plan on covering during your May 14 public meeting?

Mr. GOLDHAMMER. Definitely, archeological and wildlife issues at this time. We don't see any particular problems with them, but according to law, we do have to address those issues at public hearing.

Hopefully our planning report and draft environmental statement will show people that we have taken all of those issues into consideration, have solutions, we believe, that are viable solutions for those particular problems, unless something arises that we don't foresee at this time.

But we really feel comfortable with the environmental issue we have on the project, Senator.

LOCAL PROJECT SUPPORT

Senator ABDNOR. Is there definite, strong support for this project?

Mr. GOLDHAMMER. We certainly do have strong support. I don't know how to say it. So much depends on what I bring to you today, really, because we have the critical financial problems on the farms and the

ranches in our particular area, and we know that those people that plant an acre of corn this year, unless the prices change for the better, they are probably going under dry land conditions. If they raise an average crop in our area, they will probably lose $34 an acre before they ever get started.

On the other hand, if we had this irrigation project in place and could get the projected yield that we have in here, which is relatively low, 140 bushel of corn on irrigated land is not uncommon, but it is not just corn and those kinds of things. It would give us the ability to go to some specialized crops. It would give us the ability to put in some processing plants that we have already people interested in and doing some inquiring on. It would give us the ability to give some people jobs that at this point in time do not have a job in South Dakota and have nowhere to go unless they go out of State to get one because there is nothing to subsidize agriculture as far as industry is concerned to pick up those extra people.

So an awful lot weighs on my shoulders, an awful lot weighs on the board of directors and the local people that are trying to put this relatively small 45,000-acre project together. Certainly people that serve us from South Dakota, a tremendous amount of weight and pressure is on you because it is critical we do it now.

We have already waited 35 years and we just absolutely can't wait any longer.

We want to do our part for the national debt and try to get that thing taken care of. But we beg of you, if there is any way we can proceed at a moderate pace and continue moving forward, we ask that of you.

I really don't have any more to say unless you have some questions, Senator.

Senator ABDNOR. Mr. Goldhammer, you said it extremely well. Your message was well stated and very clear. Thank you.

Mr. GOLDHAMMER. Thank you for hearing us.

CENDAK IRRIGATION PROJECT, SOUTH DAKOTA

STATEMENT OF DAVID L. HAUSCHILD, CHAIRMAN, CENDAK WATER SUPPLY SYSTEM, INC.

ACCOMPANIED BY DON FAULSTICH, EXECUTIVE DIRECTOR

Senator ABDNOR. Our next witness is David Hauschild representing CENDAK.

Gentlemen, we welcome you to the committee.

Dave, I guess you are the spokesman here for the group.

Mr. HAUSCHILD. Thank you, Senator.

Senator ABDNOR. We will be happy to put the entire statement in the record. That is the entire statement?

Mr. HAUSCHILD. That is the entire statement, Senator. Also, I did bring with me a statement from Mr. John Loucks, president of the Upper Missouri Water Association which I would like to have insersted in the record.

Senator ABDNOR. Without objection, it will be made a part of the record.

[The statement follows:]

STATEMENT OF JOHN T. LOUCKS, PRESIDENT, UPPER MISSOURI WATER USERS ASSOCIATION

As President of the Upper Missouri Water Users Association comprised of water users in Montana, North Dakota, South Dakota, and Wyoming, I request that you include this statement in the record of hearings for the CENDAK Irrigation Project. I fully appreciate the fact that each and every water use proposal in the Missouri Basin in our area merits your most sincere review.

The 78th Congress of the United States undertook the task of taming the Missouri River. The Pick-Sloan Missouri Basin Program endorsed a plan to provide the states within the Missouri River Basin a means to put to beneficial use this water resource. To the downstream states the Program put an end to the fear of yearly spring floods with the accompanying devastation of personal property and inundation of fertile bottom lands. In addition, downstream development has become a byproduct of the Basin Plan. While the downstream states are benefiting, what has the program accomplished for the upstream states and in particular South Dakota? South Dakota received a permanent flood on over 500,000 acres of fertile river bottom lands.

South Dakotans should not have to wait any longer for promises to be fulfilled. Droughts have a disastrous effect and have crippled agriculture with in our state. In contrast to the national average of 3 percent, over 20 percent of South Dakota's income is generated by farming and ranching. Each drought triggers an economic tailspin that cost not just us, but taxpayers nationwide.

South Dakota is totally underdeveloped in terms of Missouri River water. Three percent of South Dakota's crop acreage is irrigated. South Dakota could double its irrigation or stop altogether and it would have no noted impact on national grain surpluses. Increased irrigation in the State generates local economic activity that would be very beneficial to the agricultural sector. The acres irrigated privately along the Missouri River have shown a large increase in gross dollars spent and returned compared to nonirrigated acres.

The State of South Dakota and the local sponsors of the CENDAK Project have expended well over 1 million dollars toward development of the irrigation project. These funds were used toward the completion of a project planning report. This clearly demonstrates that the people of South Dakota have established water project priorities. The local people have demonstrated a commitment to pursuing the completion of the project. All we need is the federal commitment and the Missouri River Basin Program will begin to function for South Dakota as planned.

In closing, I would add that I believe it is time for the citizens of South Dakota to receive the benefits promised 40 years ago. I urge this committee to honor the promises made and the effort of those people dedicated to water development by acting favorably in your review of the CENDAK Irrigation Project.

LETTER FROM JAMES L. LEWIS, CENDAK WATER DEVELOPMENT DISTRICT

April 2, 1985

Honorable James Abdnor
U. S. Senate
4327 Dirksen Senate Building
Washington, D. C. 20510

Dear Senator Abdnor:

Please express to members of the Subcommittee on Energy and Water Development, Committee on Appropriations the CENDAK Water Development District Directors support for a 1.775 million dollar appropriation included in the President's Budget for fiscal year 1986 for continued investigations of the CENDAK Water Supply System.

Thank You;

James L. Lewis

PROJECT CONCEPT

Mr. HAUSCHILD. Mr. Chairman, my name is David L. Hauschild. I am a farmer from Pierre, S. Dak., and chairman of the CENDAK Water Supply System, Inc. With me today is Don Faulstich, a rancher from Highmore, who is also executive director of CENDAK.

CENDAK is a nonprofit, grassroots organization which has been participating financially and technically with the Bureau of Reclamation and the State of South Dakota in studies of the proposed CENDAK unit of P-SMBP.

We appreciate this opportunity to strongly support the President's fiscal year 1986 budget request for $1,775,000 for advance planning studies of the Central South Dakota Water Supply System by the Bureau of Reclamation.

The basic purpose of the proposed 474,000-acre sprinkler irrigation project is to stabilize the livestock industry of drought-prone central South Dakota and thereby stabilize the overall regional economy.

The concept of the CENDAK unit is a new and healthy approach to long-term water development. Use of modern technology for careful scheduling of sprinkler irrigation to match day-to-day climatic changes

will result in water, soil, and energy conservation and is ideally suited to the highly productive glacial till soils of central South Dakota.

The scattered nature of the fields to be irrigated, mixed in with pastureland and dryland farming, will provide excellent opportunities for wildlife enhancement and result in minimal adverse environmental impact. Where such impacts do occur, they will be mitigated on-farm in most instances. Water users will be committed by contract to provide such mitigation.

As more detailed land classification and drainage studies get underway during advance planning, we expect these studies to be guided by emphasis being given to evaluating irrigation practices and drainage conditions on approximately 30,000 acres that are presently irrigated successfully, some for over 25 years, despite having only a limited supply of poor quality ground water.

Recent passage by the South Dakota State Legislature of an act to establish the CENDAK Irrigation District, encompassing only those lands to be irrigated, is further evidence of strong statewide support for the CENDAK unit and the need to expedite advance planning.

Thank you, Mr. Chairman, for the opportunity to testify today. If you have any questions, I will be pleased to answer them.

STATUS OF LOCAL PROJECT SUPPORT

Senator ABDNOR. Thank you, Dave, and you, too, Don, for being here.

There is a question I do want to ask you, Dave. You are probably the closest one to the project here today. Because of that, I want to ask you a few questions about the support for this project.

Our office, needless to say, has received a number of letters expressing their opposition to this project. How do you view the support for the project: strong, moderate, or weak?

Mr. HAUSCHILD. The support for the CENDAK project by the unique way we started the project has been very strong. When we first started CENDAK, we went out and asked the farmers if water could be delivered to your farm for irrigation, would you be interested in irrigating your land. With that response only, on a verbal commitment, we had an interest of over 600,000 acres, which over the six-county area gave us the incentive to start our program.

With that, we went back to the farmers and told them we know if we want a program to get going in this area for irrigation we have to raise the initial study funds to demonstrate, at least on the reconnaissance level, that a project is feasible and is wanted by the farmers. With that we asked the farmers to come up with 25 cents to 50 cents an acre to raise that initial dollar amount, which amounted to over $150,000. With that, we hired a consulting firm to do the reconnaissance level study, and in May 1980 we submitted that report to the Governor of South Dakota and to the Bureau of Reclamation for their review to see if the project seemed feasible and could be studied under the reclamation program.

Senator ABDNOR. That is good.

Let me also ask you, the people who are opposed to this project, do you carry on a communication with them and try to get some kind of understanding and eventually even a consensus? Is there any chance of doing that?

Mr. HAUSCHILD. We have on a periodic basis, and almost whenever the information becomes available to us it has been released. We do try to cooperate, and in some instances on the preliminary alignments, where we have seen or heard of a problem because of a tree belt, we have tried to make adjustments in our project and tried to keep people as informed as we can, because a lot of our information when it comes to us is immediately available to the public.

We do have things that as the study program goes forward are not complete and are not ready for public dissemination at this time.

Senator ABDNOR. I appreciate the work you are doing there, both of you. Big projects like this are bound to have some opposition, but there is nothing better than communication to try to keep it to a minimum. I know you gentlemen are working on it.

I also appreciate your being here today. We look forward to our meeting this afternoon. Thank you.

Mr. HAUSCHILD. Thank you, Mr. Chairman.

Mr. FAULSTICH. Thank you.

BELLE FOURCHE PROJECT, SOUTH DAKOTA

STATEMENT OF DARYLD WILLIAMSON, PRESIDENT, BOARD OF DIRECTORS, BELLE FOURCHE IRRIGATION DISTRICT

Senator ABDNOR. Our next witness is Daryld Williamson for the Belle Fourche project.

Welcome, Mr. Williamson. Let me say your statement will be made a part of the record here.

Mr. WILLIAMSON. Thank you, Senator.

Mr. Chairman and members of the subcommittee, for the record, I am Daryld Williamson, president of the board of directors of the Belle Fourche Irrigation District of Newell, S. Dak. My testimony represents the official position of the irrigation district as established by its board of directors.

AUTHORIZATION FOR PROJECT REHABILITATION

The Belle Fourche project was reauthorized under the Pick-Sloan program after several years of hard work by the board of directors, by water users, Senators, Congressmen, and many others. Congress gave overwhelming approval in November 1983 which President Reagan later signed into law. The water users on the project then approved the repayment contract between the Belle Fourche Irrigation District and the United States by a margin of almost 90 percent. Acting Commissioner of Reclamation, Robert Olson, signed the repayment contract on October 10, 1984. Congress appropriated $710,000 for fiscal year 1985 and the administration limited the use of these funds to design and data collection activities.

The administration position is there shall be no new water development projects, and thus provided no funds for the Belle Fourche project in 1986.

We are upset that the Belle Fourche project is classified as a new start. We are one of the oldest Bureau projects in the Bureau's history. As a matter of fact, the design drawings are No. 1. How can the rehabilitation of this project be classified as a new start?

In January 1985, Bureau engineers began surveying some of our smaller laterals and are now working on the design. When design is completed, actual construction can begin. Placing these laterals and pipe will result in an improved water management, saving precious water that is now lost in seepage.

We are pleased that the Bureau, in anticipation of the project being funded, has now named a project manager to oversee the rehabilitation of the Belle Fourche project. We feel that rehabilitation must proceed in a continuous and orderly manner, and it is essential that the fiscal year 1986 budget include the $2.4 million as scheduled.

For the Belle Fourche project there is another important factor that should be considered. The Bureau is nearing completion of a rehabilitation program on the Riverton project, Riverton, Wyo. We feel that it would be advantageous to both the Belle Fourche project and the Bureau to transfer personnel from the Riverton project, taking advantage of the knowledge gained from this rehabilitation program, which is very similar to ours. Personnel now working on the Riverton project could be transferred to the Belle Fourche project as their work is completed, thus saving a considerable amount of money.

Water is in short supply many times in our semiarid area of western South Dakota. Rehabilitation of the Belle Fourche project will help conserve this critical resource. The livestock industry of western South Dakota, eastern Wyoming, and eastern Montana depend heavily on feed produced on the project in years when drought occurs.

We are all aware of the unsettled economic situation in the agricultural sector and any improvement that can be made in this area would be most welcome. Providing construction funds for the Belle Fourche project for fiscal year 1986 would be one step toward improving the needed economic stabilization of the area. The positive step on the regional economy is undeniable.

Mr. Chairman, in closing, we hope your committee will give serious consideration and support to our request that the appropriation of funds be made for fiscal year 1986 so that construction can begin on the Belle Fourche project. We believe that to delay construction is not in the best interest of the district or of the Federal Government.

Senator ABDNOR. Thank you, Mr. Williamson, for a very excellent statement. You made a very strong case when you said this is not a new project or a new start. This is probably one of the oldest projects, as you said, in the entire United States. We are going to reiterate that time and time again to Mr. Stockman. I have written him a letter, but he is going to be hearing a lot more about it.

As a matter of fact, he will be before my own committee which I chair. I will have Mr. Stockman in front of me sometime in the next couple of weeks going over his budget for his office. I intend to remind him of several things that he is wrong on. We hope he will listen a little better this time. Certainly, the $700,000 can be released for construction.

We have also written Senator Hatfield, chairman of the Energy and Water Development Subcommittee, who I am filling in for today, requesting funding be included in the fiscal year 1986 budget.

We will keep our fingers crossed and keep working together. Maybe we can get the job done.

Let me ask you quickly, what preconstruction activities are you undertaking this year, and what would you also hope to accomplish if we could get construction funding for fiscal year 1986?

Mr. WILLIAMSON. We have determined that in the early stages of construction, it would be well to go to some of our smaller laterals so the water users on the project could see some immediate results of these funds. Also, with the small amount that has been appropriated, the major projects would have to wait. So by taking some of the smaller laterals, we could complete them and not have an unfinished construction started should the funds cease to become available.

As far as 1985 is concerned, we, of course, are not able to use any of these funds under the present regulations for any construction, but we would certainly like to see some funds released in 1985. But more importantly, we want to have funds in the 1986 budget.

Senator ABDNOR. Thank you. We certainly hope that will come true.

Gentlemen, we thank you. It is a long way back to Belle Fourche. We appreciate your coming all that distance to testify today. Thank you very much.

Mr. WILLIAMSON. Thank you, Senator.

Mr. Chairman, with your permission, I would like to introduce into the record a statement supporting funding of $2.4 million for the Belle Fourche project that I have here before me.

We want to thank you for holding these hearings and appreciate the opportunity to make these comments.

Senator ABDNOR. Without objection, the statements will certainly be made a part of the record.

Mr. WILLIAMSON. Thank you.

[The statement follows:]

STATEMENT OF JOAN PASCO, EXECUTIVE DIRECTOR, BELLE FOURCHE (S. DAK.) CHAMBER OF COMMERCE

The Belle Fourche Chamber of Commerce urges the Federal Government to renew its fiscal commitment to the rehabilitation of the Belle Fourche Irrigation District, located in Butte County, S. Dak. The present irrigation canals and infrastructures of the system have deteriorated, crippling the efficiency of this 80-year-old project. We support the original commitment from the Federal Government to fund the restructuring work necessary to update the irrigation system. We are currently using twice the amount of water necessary to irrigate the 57,100 acres of cropland which are on the project due to the inefficiency of the outdated system.

The irrigation system is vital to the rural economies of our tri-State area and must be maintained. The value of this cropland would be drastically reduced without access to the water provided by the Belle Fourche Irrigation District. We must emphasize that the Government is not funding a new water project, merely updating one of its systems which has had very little support maintenance since its construction in 1905.

The owners of this irrigated land have already approved the ultimate payback of $9 million toward the cost of upgrading the project.

The economic impact of this project to the tri-State area of South Dakota, Wyoming, and Montana cannot be understated. The entire area has not fully recovered economically from the recession of the late 1970's and is being repressed by the declining input from agriculture. The construction jobs created will yield new dollars and income for our area which will result in long-term industrial and retail growth for Belle Fourche and the tri-State area which our city services.

WEB RURAL WATER PROJECT, SOUTH DAKOTA

STATEMENT OF MORRIS KURLE, CHAIRMAN, WEB WATER DEVELOPMENT ASSOCIATION, INC.

ACCOMPANIED BY CURT HOHN, MANAGER, WEB PROJECT

Senator ABDNOR. Our next witness is Morris Kurle, who will be representing WEB project. He is accompanied by Curt Hohn, who is project manager. This is a project we have been interested in for years and are making some headway on.

Gentlemen, we welcome you to the committee today. Whatever you have for statements will be made a part of the record. You can proceed in any manner you care to.

Mr. KURLE. Thank you.

[The statement follows:]

STATEMENT OF MORRIS KURLE, CHAIRMAN, BOARD OF DIRECTORS, WEB WATER DEVELOPMENT ASSOCIATION, INC.

Mr. Chairman, and members of the Energy and Water Development Subcommittee on Appropriations. I am Morris Kurle, Chairman of the WEB Water Development Association, Inc., Board of Directors, which serves as the local sponsor for construction and operation of the WEB Pipeline Project, a Bureau of Reclamation Project being constructed under Public Law 96-355 & 97-237. With me today is Curt Hohn, Manager of the WEB Project.

In summary, it is our request that the Appropriations Subcommittee approve the line item appropriation for the WEB Pipeline Project in the FY-86 budget of $18,525,000. We are grateful for the recognition and support shown for the Project by the Reagan administration. The funds are needed to continue construction on the Project and to insure an early completion date in 1988-1989. In addition, we would also request your favorable consideration and support for the reallocation of an additional $7,000,000 in construction fund for the WEB Project from funds available in the FY-85 budget. Last year the WEB Project showed a construction capability of $18.9 million dollars in Fiscal Year 1985. Congress appropriated $10 million dollars for construction. In November of 1984, the WEB Association requested that the Bureau of Reclamation consider reallocation of $8.5 million dollars in available funds to WEB for construction contracts which could be advertised, awarded, and substantially completed in FY-85. After reviewing our capability proposals the Bureau of Reclamation has administratively authorized $1.5 million dollars in additional construction funding. We understand that the allocation of the additional $7,000,000 would require approval of the committee. On the chance that these additional funds might be made available, the WEB Association authorized its engineers to advertise contracts for Phase II of the Project on March 18, 1985. Bids will be opened on April 17 and contracts could be awarded for an additional 550 miles of rural pipeline construction and 30 miles of additional main pipeline construction if the funds were made available. Phase I and Phase II construction of the WEB Project combined would provide water delivery to 900 farms and 8 towns in South Dakota as early as December 8, 1985. We contend there are sound reasons for the Subcommittee to approve the reallocation of additional funds for WEB in Fiscal Year 1985 and your approval of $18,525,000 in project construction in Fiscal Year 1986.

1. Construction of the WEB Project will bring good quality domestic water to 3,250 farms and 44 towns in South Dakota for human and livestock consumption. Presently these farms and towns rely on ground water supplies of poor quality which are expensive to construct and difficult to maintain. Construction delay could result in countless farms and towns having to replace or repair ground well water sources at great expense.

2. Adequate funding for the Project will assure early repayment of loan funds by Project users. Under the repayment contract for the WEB Project, repayment begins when the Project is completed. Delay in construction funding would extend the date when repayment would begin.

3. Construction contracts on Phase I of the Project have been awarded and are over 50% complete. By December of this year major project features including the Lake Oahe Intake Pumping

Plant, Water Treatment Plant, Main Transmission Pipeline will be capable of providing the first water service to users in Phases I and II of the project provided adequate construction funding is available or extend the secondary pipeline distribution system.

4. The construction market is favorable for construction of a project like the WEB pipeline. The first 7 contracts awarded have came in below the engineers estimate.

5. Construction of the WEB Project in South Dakota results in jobs and economic impact for people in other states. Pumps, pipe, controls, and other materials manufactured in such states as Minnesota, Tennessee, Pennsylvania, Alabama, Illinois, California, Maryland, Ohio, Iowa, New Jersey, Colorado, Missouri, Kansas, New York, Indiania, Wisconsin, Oklahoma, North Dakota, and others are all required for construction of this project.

6. Construction of the WEB Project represents the first federal construction funding for a major water project in South Dakota since 1977. Construction of the WEB Project represents a partial compensation to the State of South Dakota for the loss of some 500,000 acres of productive farm land which were inundated by construction of the main stem reservoirs on the Missouri River in the 1960's. Those reservoirs provide flood control and power generation for Missouri River Basin states in the country.

Action Requested

We respectively request that the Appropriations Committee give favorable consideration and approval to a reallocation of $7,000,000 dollars in additional construction funding for the WEB Project in Fiscal Year 1985 from available funds, and that the Subcommittee also give favorable consideration and approval for the $18,525,000 included in the President's Budget for FY-86 for the WEB Pipeline Project. The following summary is information in support of this request.

Project Description

The WEB Pipeline Project, officially titled the "WEB Rural Water Development Project" consists of a pumping plant, water treatment plant, main transmission pipeline, and secondary distribution pipeline system to be constructed in 10 counties in north central South Dakota for the purpose of providing quality domestic water to towns and farms in the project area. The source of the water for the project is the Missouri River, Lake Oahe Reservoir, and impoundment of water created by construction of Lake Oahe Dam and Reservoir constructed by the Corps of Engineers in the early 1960's.

The area to be served by the project contains 5,245 square miles. The WEB Project will provide domestic water to 44 towns and 3,250 farms and ranches, as well as provide water for 532,000 head of livestock. The Project will provide water service to approximately 8% of the area of the State of South Dakota, and within that area approximately 83% of the population are signed up for water service.

Project construction will include 116 miles of main transmission pipeline ranging in size from 30 inch to 14 inch, and 3,401 miles of secondary transmission and distribution pipeline ranging in

size from 14 inch to 1-1/2 inch. The Main Transmission line would be high pressure line constructed of either ductile iron, steel, or equal materials and the secondary transmission and distribution system lines would be constructed of PVC (poly-vinyl chloride) pipe.

Once the project is operational, water will be pumped from Lake Oahe 3½ miles east to a central treatment plant where the water will be cleaned, filtered, treated and dispersed to project users throughout the WEB pipeline transmission system. Water will be sold to users on a metered basis and revenues collected will serve as a basis for the repayment of project construction loans and for operation of the system. Feasibility of the Project and the project repayment capablity were examined by the Bureau of Reclamation, the Department of Interior, the Office of Management and Budget, and the State of South Dakota in 1983 and approved. All construction plans and specifications are reviewed and approved by the Bureau of Reclamation and the State of South Dakota Department of Water and Natural Resources before bids are let and contracts are awarded. The Bureau of Reclamation, with offices in Pierre, South Dakota provide federal oversite for construction of the Project, and a representative of the Bureau of Reclamation attends all meetings relating to project construction.

The activities of the WEB Water Development Association, Inc., are governed by a nine member Board of Directors which is elected by the membership at an Annual Meeting. The WEB Board of Directors serves as the local sponsoring entity for the WEB Project and has signed repayment contracts and documents related to construction of the project on behalf of the WEB membership, which includes all farmers and towns which have signed contracts for water service.

Authority

Construction of the WEB Project was first authorized by Congress in September of 1980 by passage of Public Law 96-355, and was reauthorized through passage of Public Law 97-273 in September of 1982. Project feasibility was confirmed by completion of a "Design Report" in September, 1983 which was reviewed and approved by the Bureau of Reclamation and the South Dakota Department of Water and Natural Resources. A repayment contract was signed and entered into on September 28, 1983 by the U.S. Department of Interior and WEB Water Development Association, Inc., for reimburseable costs associated with the project construction. The first construction contract for earthwork and site preparation on the Lake Oahe Pumping Plant was awarded October 13, 1983 and construction began on October 20, 1983.

Construction Status

As of this date, a total of nine contracts have been awarded for construction of project features in Phase I totaling $18,007,000.(See attachment "A"). In addition, contracts totaling $13,491,000 have been approved and are being advertised for bids in anticipation of additional funds being made available. Those contracts, which will be for construction in Phase II of the Project, are scheduled to be opened April 17, 1985. If the funding is not available, we will not be able to award those contracts as planned. Presently $20,000,000 dollars in federal funds and $1,233,000 dollars in local funds are available for project construction. As shown previously, contracts totaling $18,007,000 dollars have been

awarded and are under construction. An additional $14,341,000 in Phase II contracts could be advertised, awarded, and gotten underway in Fiscal Year 1985 if adequate funding were provided by Congress (See Attachment "A"). What we have requested would allow for the completion of construction of the Main Pumping Plant, the Treatment Plant, the Main Transmission Pipeline, Phase I Rural Distribution, Phase II Rural Distribution, and the Main Reservoir System in 1985 and bring a feasible operational portion of the WEB Project into operation by December of this year. This funding level and the construction associated would bring water service to approximately 900 farms and 8 towns in South Dakota (Faulkton, Wecota, Roscoe, Hosmer, Selby, Pollock, Akaska, Glenham) as well as provide bulk water service to the State Line Water Cooperative, a rural water system being constructed by the Farmer's Home Administration in Emmonds County, North Dakota which will serve 100 farms.

Full and adequate funding of the WEB Project in Fiscal Year 1986 at a level of $18,525,000 would facilitate operation of Phase I & II of the WEB Project, as well as provide a base for extending the project well into Phase III and FY-87. The funding we are requesting herein, would assure the construction of 1,165 miles of secondary distribution and 52 miles of main transmission pipeline.

Funding and Repayment

Based on 1983 costs, project construction cost is estimated at $92,638,000. Funding for the construction of the WEB Project will come in the form of a $67,062,000 grant and a $21,576,000 loan from the Federal Government, with $4,000,000 in construction funding being provided by WEB members hookup fees and contributions from the Oahe Conservancy Subdistrict and the State of South Dakota. It should be noted that the indexed federal funding ceiling authorized by Public Law 97-273 has been estimated by the U.S. Bureau of Reclamation as of October, 1984 to be $96.0 million, and with the additional $4.0 million dollars in nonfederal funds, resulting in an estimated actual total project cost ceiling of $100,000,000 dollars (October 1984 dollars).

Need

The overriding factor in support of construction of the WEB Project since its inception in 1975 has been the great need for good quality domestic water in north central South Dakota. The only source of domestic water for much of the project area are ground water wells which draw water from underground aquifers. The quality of the groundwater is poor and in most cases does not meet the minimum federal health and safety standards. It is estimated that from 20% to 25% of the water consumed in the WEB Project area is not fit for human consumption. Poor quality water reduces animal production and results in health problems in humans as well as livestock.

In addition ground wells are difficult to maintain and costly to replace. The estimated life of a deep artesian well in the western portion of the WEB Project area is estimated at 10 to 12 years and requires a replacement cost of from $20,000 to $25,000 dollars. This high maintenance and replacement costs, along with the effects of poor water quality, causes a hardship and burden for farmers, ranchers, livestock producers,and residents of towns in the Project area.

Construction of the WEB Pipeline Project will provide good quality domestic water to a substantial portion of South Dakota at a reasonable cost and will allow ranchers and farmers the opportunity to purchase their water supply on a monthly basis, rather than having to face major capital cost outlays for wells every 10 to 15 years. The WEB Water Development Association submits that this will provide assistance to farmers and ranchers in the Project area making it possible for them to stay on the land and remain in agriculture. The WEB Project will also add to the economic stability of the project area by providing jobs and by freeing capital for other purchases and repayments.

WEB Water rates, which serve as the basis for loan repayment, will result in an average estimated rural water bill for farms and ranches of approximately $50 per month based on a water usage of 19,000 gallons per month. This rate is slightly higher than water rates paid by water users on similar rural water systems in operation in South Dakota and other midwestern states. Bulk water service will be provided to towns at rates varying from $1.22 per thousand gallons to $1.79 per thousand gallons depending upon the towns water storage capability and water system.

Local Support

The WEB Pipeline Project enjoys strong local support in the project area and in the entire state of South Dakota. This support is evidenced by the high percentage of signup in the project area (83%) and the funding support provided by the State of South Dakota, the Oahe Conservancy Subdistrict, and WEB membership hookup fees. The Oahe Conservancy Subdistrict is a regional "water district" in South Dakota in which the WEB Project is located. The Oahe Conservancy Subdistrict has contracted to provide grant funding of up to $3,100,000 toward construction of the project and the State of South Dakota has offered to provide loan funds of $600,000 to assist with project construction. Over $700,000 has been collected from WEB members in the form of hookup fee payments. Because the project waters are delivered through a buried pipeline system, construction will cause no long term disruption of farming practices and the environment. In fact, as an added benefit, all right-of-way secured for construction of the pipeline system has been voluntarily given by landowners without compensation, which results in less federal construction expenditures and we feel shows the strong local support and the great need that exists in the project area.

The WEB Pipeline Project enjoys the strong and active support of the members of the South Dakota Congressional Delegation, which includes Senator James Abdnor, Senator Larry Pressler, and Congressman Tom Dasbcle. The Project also enjoys the strong support of the South Dakota Legislature and Governor William Janklow.

Conclusion

In conclusion, we respectively request the members of the Energy and Water Development Subcommittee on Appropriations, in both the House and the Senate, to recognize the committment made to South Dakota for water development by providing adequate funding for the WEB Pipeline Project in Fiscal Year 1985-1986 to assure that the project will be completed in a timely fashion, at the least possible cost to the federal government, and bring water to an area that desperately needs improved domestic water. We thank you for your consideration and support.

WEB Project Report

Construction Progress

The first construction began on the WEB Water Project on October 20, 1983 when and Aberdeen, South Dakota contractor began excavation of some 85,000 cubic yards of earth material to make way for the construction of the WEB Lake Oahe Intake and Pumping Plant.

Winter weather conditions delayed further construction on the Lake Oahe Intake and Pumping PLant site until March 26, 1984 when the contractor began predrilling holes for construction of the caisson. Construction on the Raw Water Pipeline, the Water Treatment Plant, and Phase I Rural Distribution Pipeline was not started by the contractors until May 1, 1984.

Inspite of this late start in the 1984 Fiscal Year, an impressive amount of construction activity has taken place on the WEB Water Project. Below is a comparison of the construction activity from November, 1983 to November, 1984:

Project Feature	Status Nov. 83	Status * Revised	Construction Complete
Lake Oahe Intake & Pump Station (earth work) 1-1A	-0-	$ 53,897	100%
Lake Oahe Intake & Pumping Station (construction) 1-1B	-0-	788,579	49%
Raw Water Pipeline (3.5 miles, 24" DIP) 1-2	-0-	614,992	100%
Water Treatment Plant 1-3	-0-	1,439,634	42%
Main Transmission Pipeline (3.5 miles, 24" DIP) 1-4	-0-	612,679	97%
Phase I Rural Distribution Pipeline (328 miles) 1-5A	-0-	2,827,000	70%
Radio Communication System R-1	-0-	11,550	50%
Cultural Resources Survey - Phase I	-0-	12,249	100%
Phase I Rural Distribution Pipeline (308 miles) 1-5B	-0-	571,296	23%
Main Transmission Pipeline (14 miles, 24" DIP) 1-4A	-0-	519,923	19%
Main Storage Reservoir (2.5 million gallon) 1-7	-0-	(awarded)	0%
Secondary Storage Tanks (3 tanks) 1-6B	-0-	(awarded)	0%
Phase II Rural Distribution Pipeline (577 miles)	-0-	(advertised)	
Main Transmission Pipeline (30 miles, 30"-24")	-0-	(advertised)	
Phase III & IV Rural Distribution Pipeline (600 miles)	-0-	(designed)	
Main Transmission Pipeline (20 miles, 24"- 18")	-0-	(designed)	

(* Revised as of April 1, 1985)

Construction Capability FY-85

Engineer's estimates project a construction expenditure capability during Fiscal Year 1985 of $20,200,000. Funds available to the project, including federal appropriation and local funds, total $12,070,000.

The WEB Water Development Association Board of Directors requests that the Commission of the Bureau of Reclamation and the Secretary of the Department of Interior give consideration to providing an addition $8,500,000 in construction funding for the WEB Water Project for anticipated construction expenditures which will be recognized in Fiscal Year 1985.

WEB WATER PROJECT

SUMMARY OF AUTHORIZED PROJECT APPROPRIATIONS

(As of November 8, 1984)

Federal Appropriations		WEB (Local)		Total
Description	Total	Description	Amount	
Grant/Loan	$ 1,900,000	Prior Approved Costs	$ 360,000*	$2,260,000
FY-84	6,000,000	WEB FY-84	273,000*	6,273,000
FY-84 Supplement	600,000	-	-	600,000
FY-85	10,000,000	WEB FY-85 (proposed)	600,000	10,600,000
Total (Federal)	$18,500,000	Total (WEB)	$ 1,233,000	$19,733,000

NOTES: * Figures rounded. Actual figure is $360,597 in FY-83 and before. Actual expenditure in FY-84 is $272,430.

WEB WATER PROJECT

CONSTRUCTION CAPABILITY

VS

FUNDS AVAILABLE

(November 8, 1984)

Construction Funds Available (FY-83, FY-84, & FY-85)	$19,733,000
Less: Construction Expenditures (FY-83 & FY-84)	7,664,450
FUNDS AVAILABLE - October 1, 1984 (FY-85)	$12,068,550
Less: Construction Capability For FY-85	20,190,067 **
ADDITIONAL FUNDS NEEDED FY-85 - Construction Capability	$ 8,121,517 *

Notes: * Rounded to $8,500,000.

** See "Project Feature Construction Expenditure Estimate" chart attached.

PROJECT FEATURE CONSTRUCTION EXPENDITURE ESTIMATE

SUMMARY NOVEMBER 7, 1984

Project Feature	Contract Number	Estimated Construction Cost at Completion		Project Construction Expenditure		
		Figure	Cumulative	FY-84	FY-85	FY-86
1. Intake & Pumping Stations	1-1 Series	$1,890,000	$1,890,000	$ 765,000	$1,096,000	$ -
2. Raw Water Pipeline	1-2	617,000	2,507,000	611,692	5,308	-
3. Water Treatment Plant	1-3	3,800,000	6,307,000	1,055,333	2,145,000	600,000
4. Mound City & Selby West	1-5A & 1-6B	4,074,000	10,381,000	2,508,097	1,449,097	116,000
5. Main Transmission Pipeline	1-4 Series	3,546,000	13,927,000	480,144	3,065,856	-
6. Main Storage Reservoir	1-7	1,090,000	15,017,000	-	1,090,000	-
7. Selby East, Lowry & Hoven	1-5B & 1-6B	2,990,000	18,007,000	-	2,350,000	640,000
8. Main Transmission Pipeline #2	2-1	7,191,000	25,198,000	-	2,200,000	4,991,000
9. Java Secondary Trans. & Rural Dist.	2-2 Series	1,048,000	25,246,000	-	800,000	248,000
10. Roscoe Secondary Trans. & Rural Dist.		2,606,000	28,852,000	-	1,100,000	1,506,000
11. Hosmer Secondary Trans. & Rural Dist.		525,000	29,377,000	-	500,000	25,000
12. Faulkton Secondary Trans. & Rural Dist.		1,512,000	30,889,000	-	600,000	912,000
13. Seneca Secondary Trans. & Rural Dist.		609,000	31,498,000	-	400,000	209,000
14. Telemetry & Controls	2-3	630,000	32,128,000	-	120,000	310,000
15. Operation & Maintenance Center	2-4	220,000	32,348,000	-	130,000	90,000
16. Main Transmission Pipeline #3	3-1	1,172,000	33,520,000	-	-	1,172,000
17. Town System Improvements		250,000	33,770,000	-	50,000	200,000
18. Beebe Secondary Trans. & Rural Dist.		266,000	34,036,000	-	-	266,000
19. Main Transmission Pipeline #4		2,837,000	36,873,000	-	-	1,300,000
20. Cresbard Secondary Trans. & Rural Dist.		3,125,000	39,998,000	-	-	1,600,000
21. Ipswich Secondary Trans. & Rural Dist.		1,003,000	41,001,000	-	-	800,000
22. Leola Secondary Trans. & Rural Dist.		2,867,000	43,868,000	-	-	1,300,000
Construction Expenditure - SubTotal				$5,420,450	$17,102,067	$16,285,000
Engineering Basic Services				1,130,000	833,000	993,000
Federal Administration				123,000	125,000	125,000
Add'l. Engineering, Land & Rights, Legal				559,000	205,000	190,000
Contingencies				194,000	999,000	951,000
Equipment				24,000	26,000	26,000
Initial Operation & Mainenance Expense					30,000	152,000
Construction Inspection (Engineers & WEB)				214,000	870,000	829,000
TOTAL - Construction Expenditure & Other Costs				$7,664,450	$20,190,067	$19,551,000

LETTER FROM MORRIS KURLE

November 8, 1984

Mr. Joseph B. Marcotte,Jr.
Regional Director
Upper Missouri Region
Bureau of Reclamation
P.O. Box 2553
Billings, Montana 59103

Dear Mr. Marcotte,

We have reviewed construction expenditure capability for the WEB Project with our consultant engineers and members of your staff, and have determined that an additional $8,500,000 in construction funding will be needed for the project in Fiscal Year 1985.

Enclosed are summary charts which support this request. Also enclosed is a "Project Schedule and Cash Flow Projection" dated November 7, 1984, which was prepared by WEB consultant engineers Bartlett and West/Boyle Engineering Corporation which shows the anticipated construction expenditure through Fiscal Year 1989.

If additional construction funds become available in FY-85 we would greatly appreciate any consideration that you might be able to give this request.

Sincerely,

Morris Kurle

Morris Kurle, Chairman
WEB Water Development Association
Board of Directors

INTRODUCTION

The WEB Rural Water Development Project, commonly called the "WEB Pipeline Project," was first conceived in 1975 by county and town officials from Walworth, Edmunds, and Brown counties who were concerned with improving domestic water supplies. The project received its name from the initials of the three organizing counties. The original proposal was aimed at serving towns and municipalities located along Highway 12. Because of the need for improved domestic water in the area, by 1976 the scope of the project was expanded to include rural as well as municipal users in six counties, Walworth, Edmunds, Brown, Day, Spink, and Campbell.

A Preliminary Feasibility Report was completed in March, 1977 by Dewild, Grant, Reckert, and Associates of Rock Rapids, Iowa. The engineering study was financed through the collection of local funds and with matching funds from the Oahe Sub-District. The report showed that a rural water transmission pipeline system could be constructed to serve municipalities and rural users.

Steering committees were formed in six counties and good intention fees of $35.00 were collected from farm and rural residents. Towns paid good intention fees ranging from $10.00 to $15.00 per thousand gallon of estimated daily water use. Information on rural and municipal water use was collected and served as a basis for a final engineering report.

In January, 1979, the joint venture engineering firm of Bartlett and West/Boyle Engineering Corporation was retained to undertake a final engineering plan for the project. Farms and towns in parts of four other counties were added to the project (Potter, McPherson, Faulk, and Hand Counties). In January, 1980, a "Summary Engineering Report" was completed and presented to the U.S. Congress and federal agencies in support of federal authorizing legislation.

The WEB Project was first authorized by Congress on September 15, 1980 as part of an Oahe settlement legislation. That authorization was cancelled a year later when provisions of the bill, unrelated to WEB, were not met. To confirm and verify local support and interest in the project, the WEB Association began collecting hookup fees from rural users in January, 1981. County steering committees and local officials continued to press Congress for authorization of the project. In September, 1982, the WEB Project was subsequently reauthorized by Congress and signed into law by President Ronald Reagan. A "Final Design Report" was completed in September, 1983, confirming the feasibility of the project, and a federal financing loan/grant contract agreement was entered into by the WEB Association and the U.S. Department of Interior on September 29, 1983. The first construction began on the project in Walworth County on October 20, 1983.

Funding for the WEB Project has been obtained through a variety of sources including federal, state, local, and membership fees. Principal funding is provided through loans and grants from the federal government administered through the U.S. Department of Interior by the Bureau of Reclamation. The State of South Dakota has made $600,000 in loan funds available to the project. The Oahe Conservancy Sub-District is committed to providing $3,100,000 in funds. Membership "hookup fees" in excess of $650,000 have been collected for the project, and WEB users have committed to repay $21,576,000 in loan costs.

PROPOSED
WATER RATE SCHEDULE
Rural Users
(12/2/82)

RURAL HOUSEHOLD USERS
(1 service unit)

Water Rate Including Minimum Bill (Read Monthly)

Minimum Bill	$25.00 for 2,000 gallons
Next 4,000	2.40 per 1,000 gallons
Next 4,000	1.85 per 1,000 gallons
Next 5,000	1.40 per 1,000 gallons
All over 15,000	.90 per 1,000 gallons

MUNICIPAL INDIVIDUAL HOUSEHOLD USER
(Towns where no community water system exists.)

Water Rate Including Minimum Bill (Read Monthly)

Minimum Bill	$12.50 for 2,000 gallons
Next 4,000	2.40 per 1,000 gallons
Next 4,000	1.85 per 1,000 gallons
Next 5,000	1.40 per 1,000 gallons
All over 15,000	.90 per 1,000 gallons

METERED LIVESTOCK/SEASONAL HOUSEHOLD USERS

Water Rate Including Minimum Bill (Read Annually)

Minimum Bill	$150.00 for 2,000 gallons
Next 4,000	2.40 per 1,000 gallons
Next 4,000	1.85 per 1,000 gallons
Next 5,000	1.40 per 1,000 gallons
All over 15,000	.90 per 1,000 gallons

PROPOSED
WATER RATE SCHEDULE
Municipalities & Bulk Users
(12/2/82)

User	Average Water Cost
Class "A"	$1.22 per 1,000 gallons used (User provides storage and maintains wells for peaking needs.)
*Class "B"	$1.55 per 1,000 gallons used (User provides storage and WEB provides all water.)
*Class "C"	$1.79 per 1,000 gallons used (WEB provides all water and storage.)

* Towns and bulk users with less than 175 population or 35,000 gallons of water use are eligible for Class "B" or Class "C" status. Rates based upon $18.33 per 1 gpm of design capacity requested.

(Rates subject to review and adjustment.)

RURAL HOOK-UPS

WEB PROJECT
(As of 3/84)

County	Hookups
Beadle	5
Brown	871
Campbell	184
Clark	1
Day	330
Edmunds	340
Faulk	287
Hand	33
McPherson	146
Potter	84
Spink	601
Walworth	332
Total	3,214

TOWN MEMBERS AND BULK USERS

Barnard	Chelsea	Mina Lake RWS
Bath	Cresbard	Little Leola Dev.
Columbia	Faulkton	Green Acres Trailers, Bath
Ferney	Miranda	NW School, Mellette
Frederick	Rockham	Pleasant Valley Dev., Aberdeen
Groton	Wecota	Elm Valley School, Barnard
Mansfield	Zell	State Line Water Coop, Hague, ND
Stratford		Richmond Heights, Aberdeen
Verdon	Leola	Deerfield Colony, Ipswich
Warner	Wetonka	Green Acres Trailer Court, Redfield
Pollock	Ashton	
	Athol	
Andover	Brentford	
Bristol	Conde	
Butler	Doland	
Holmquist	Mellette	
Lily	Northville	
Webster	Turton	
	Frankfort	
Hosmer		
Ipswich	Akaska	
Loyalton	Glenham	
Mina	Lowry	
Roscoe	Selby	

WEB Major Suppliers

Contract 1-1B - Intake

Reinforcing Steel - Unknown
Major Electrical Equip. - General Electric
Pumps - Layne-Bowler Memphis, TN 38108
Building - Varco-Pruden Memphis, TN 38117
Telemetry - *Aquatrol Corp. St. Paul, MN 55113
Steel Pipe & Fittings - Unknown
Valves - * Dresser Mfg. Div., Dresser Industries
Bradford, PA
Surge Control Equip. - Fluid Kenics (City Unknown)

Contract 1-2 - Raw Water Line

Pipe - U.S. Pipe Box 10406
Birmingham, AL 35202
Fittings - *U.S. Pipe Box 10406
Birmingham, AL 35202
Telemetry Cable - Unknown
Air Valves - Apco/Valve & Primer Corp.
1420 S. Wright Blvd.
Schaumburg, IL 60193
Valves - Henry Pratt Company
401 S. Highland Ave.
Aurora, IL 60507

Contract 1-3 - Treatment Plant

Building - Varco Pruden (See Above)
Telemetry - *Aquatrol (See Above)
Reinforcing Steel - Paper, Calmenson & Co.
P.O. Box 43432 St. Paul, MN
Pipe & Fittings - *U.S. Pipe (See Above)
Valves - *Dresser (See Above)
Pumps - Aurora Pump City of Industry, CA

Travelling Bridge - *Environmental Elements Corp.
Baltimore, MD
*Richards of Rockford
Rockford, IL
*Westmont Industries
Sante Fe, CA
*Chemineer Inc.
*Philadelphia Mixers Corp.
King of Prussia, PA
Process Equipment - Dayton, Ohio
Filter Underdrains - *Leopold Co. Zelienople, PA 16063
Filter Media - *Northern Gravel Co. Muscatine, Iowa 52761
Chemical Feed Equip. - *Wallace-Tiernan
St. Belleville, NJ 07109
Chlorine Equip. - *Wallace-Tiernan (See Above)
Electrical Control Equip. - *General Electric
Standby Generator - *Catepillar - Peoria, IL
Lab Equipment - *Hach (See below)
Lab Test Equipment - *Hach Co. Loveland, CO 80539
Steel Specialities (Grating, etc.) - Unknown
Plumbing Fixtures & Supplies - Unknown
Raw Water Tank - Aquastore Bekall, IL
Fence (Chain link) - Unknown
Paint & Painting - *Tnemec Kansas City, MO 64141
Concrete Formwork - Symons Corp. 9361 Penn Ave., So.
Bloomington, MN 55431

Contract 1-5A & 1-6A

PVC Pipe & Fittings - *Northern Pipe Fargo, ND
*Certainteed McPherson, KS
Gate Valves - *Kennedy Valve Manufacturing Co.
Elmira, NY
Brass (Saddles, ball valves, setters, etc.) - *Ford Meter
Box Co., Inc. Wabash, IN
Pumps - *Peerless Pump Inc. Indianapolis, IN
Meters - *Badger Meter Inc. Milwaukee, WI 53223
Air Release Valves - *Apco (See Above)
Meter Pits - *McCullough Industries Inc.
Murfreesboro, TN 37133
Control Valves - *Cla-Val Co. Box 1325
Newport Beach, CA 92663
Tank - Prairie Tank Plainfield, IL
or
Southwestern Porcelain Sand Springs, OK

Note: Above information based on information supplied by the Contractors on Bidding Documents or Submittals. Names preceeded by an * are our best guess as to probable supplier at the present time. Actual suppliers will be based on approved Contractor's Submittals.

Mr. KURLE. Mr. Chairman and members of the Energy and Water Development Subcommittee on Appropriations, I am Morris Kurle, chairman of the WEB Water Development Association, Inc., board of directors, which serves as the local sponsor for construction and operation of the WEB project, a Bureau of Reclamation project being constructed under Public Laws 96–355 and 97–237. With me today is Curt Hohn, manager of the WEB project.

It is our request that the Appropriations Committee approve the line item appropriation for the WEB pipeline project in the fiscal year 1986 budget of $18,525,000. We are grateful for the recognition and support shown for the project by the Reagan administration. The funds are needed to continue construction on the project and to ensure an early completion date in 1988–89.

In addition, we would also request your favorable consideration and support for the reallocation of an additional $7 million in construction funds for the WEB project from funds available in the fiscal year 1985 budget.

Last year the WEB project showed a construction capability of $18.9 million in fiscal year 1985. Congress appropriated $10 million for construction. In November 1984, the WEB Association requested that the Bureau of Reclamation consider reallocation of $8.5 million in available funds to WEB for construction contracts which could be advertised, awarded, and substantially completed in fiscal year 1985.

After reviewing our capability proposals, the Bureau of Reclamation has administratively authorized $1.5 million in additional construction funding. We understand that the allocation of the addition $7 million would require approval of the committee.

On the chance that these additional funds might be made available, the WEB Association authorized its engineers to advertise contracts for phase II of the project on March 18, 1985. Bids will be opened on April 17 and contracts could be awarded for an additional 550 miles of rural pipeline and 30 miles of additional main pipeline construction if the funds were made available. Phase I and phase II construction of the WEB project combined would provide water delivery to 900 farms and 8 towns in South Dakota as early as December 8, 1985.

Now Mr. Hohn will bring you up to date on the construction status, the support and need of the project.

Senator ABDNOR. We are not trying to rush you, but I see these gentlemen coming in for the next hearing. It is starting to bother me, I guess. They are supposed to be testifying, too.

Mr. HOHN. This can be concluded very briefly.

STATUS OF CONSTRUCTION

In summary, Senator, the major features of the project—the pumping plant, the treatment plant, and a major portion of the main transmission line—will be operational by December. Those features will serve more than just phase I, which is the brown area on the map. It will also serve the eastern part of the project, phase II in green, and the red area is phase III.

The project need, as you know—and as we hope the committee will understand—is that the main need for this project is for improved drinking water. This project provides water for livestock, towns, farms, and human consumption.

The main reason we do need it in South Dakota is the ground water in that area is of poor quality. Most of the water does not meet the Federal safe drinking water standards. At least 25 percent of the water has been deemed unfit for human consumption.

Improved water will improve livestock production, it will improve health and human consumption.

One last point we would like to make. The funding that is being requested here today means that 1,864 miles of pipe—small pipe—and 71 miles of mainline pipe could be constructed, for a total of 1,935 miles of water pipeline in South Dakota. That represents about 55 percent of this project. That much construction would provide water to 1,500 farms and 14 towns, towns like Leola, Selby, Faulkton, Ipswich, Pollock, and others. It will also provide water service to 100 farmers in North Dakota in Emmons County in what is called the State Line Rural Water Coop.

I should also point out for the benefit of those members of the committee from other States that this project, while it does involve construction expenditures in South Dakota, benefits other States.

For example, buildings, pumps, and motors are purchased in Tennessee. Meters, pumps, and other equipment is purchased in Indiana. Equipment needed for the control plant, the treatment plant, comes from California. And as an example, on the mainline pipeline, phases I, II, and III, that will involve about $11 million in construction. Of that cost, two-thirds goes for pipe. So far all of the pipe has come from the State of Alabama. That amounts to about $7.5 million.

So while the construction is in South Dakota, much of the benefit occurs to people in other States. It creates jobs; it creates impacts in other parts of the country.

Thank you.

Senator ABDNOR. Thank you. You gentlemen gave a very strong case. We are going to be doing everything we can to try to get that extra $7 million. We were happy to get that $1.5 million, but we want to keep plugging away on the supplemental in whatever avenues we can find and explore. You can be sure we will be trying to do whatever we can to get it.

We thank you for your attendance today.

Mr. KURLE. Thank you, Senator.

MISSOURI NATIONAL RECREATION RIVER

STATEMENT OF EARL ROWLAND, MISSOURI RIVER BANK STABILIZATION ASSOCIATION

ACCOMPANIED BY DARRELL CURRY, VICE PRESIDENT

Senator ABDNOR. Our next witness is Earl Rowland on the Missouri River bank stabilization.

Earl, I saw you here somewhere. I want to move speedily along.

Mr. ROWLAND. Mr. Chairman and members of the subcommittee, we greatly appreciate this chance to appear before you on behalf of the Missouri River Bank Stabilization Association to testify regarding the fiscal year 1986 budget. We would like to express our appreciation to your committee for your kindness and consideration to us as we have testified before you for the last 12 years.

The funding you have granted us has saved many acres of farmland and much of the scenic beauty along our river.

We especially wish to thank you for the $200,000 granted us last year for operation and maintenance on the section 32 structures already in place. This will serve to alleviate some of the problems created by controlling the flooding such as in 1984 in the lower reaches of the river.

We would like to request that the Missouri national recreation project be included for funding this year. This project is a 59-mile stretch of the Missouri River in Nebraska and South Dakota between Gavin's Point Dam near Yankton, S. Dak., and Ponca State Park near Ponca, Nebr. This is the only uncontrolled stretch of the river between Gavin's Point Dam and the mouth of the river and totally at the mercy of the releases from Gavin's Point Dam which are judged by the needs for flood control, hydropower, and navigation.

In the October 1984 status report, the Corps of Engineers states prior to fiscal year 1982, $600,000 had been provided to the Omaha District for advance engineering and design under the "Construction, general" appropriation.

If funding is provided in future years, the money could be used effectively to maintain existing and construct new riverbank protection works. The $200,000 Congress added to the fiscal year 1985 appropriation bill for project operation and maintenance would be used to rehabilitate existing section 32 projects.

The authority for operation and maintenance of these structures is section 707, Public Law 95-625, the Missouri National Recreation River authorization, which states in paragraph (A) provide for the construction by the United States of such recreation features and streambank stabilization structures as the Secretary of the Army—acting through the Chief of Engineers—deems necessary and advisable in connection with the segment designated by this paragraph: and for the operation and maintenance of all streambank stabilization structures constructed before the date of enactment of this paragraph and structures constructed after such date, and including both structures constructed under the authority of this section and structures constructed under the authority of any other act.

In a memorandum from the Director of Civil Works to Omaha Division, Corps of Engineers, entitled "Maintenance of Bank Stabilization Structures in the Missouri National Recreation River," he says in summary:

> You should take the actions which are within your power to assure that the existing structures are maintained.

In the Division response he says:

> Operation and maintenance funding appears to be justified in advance of construction funding.

He goes on to say in summary:

> I have an existing uncompleted project that has not been funded for construction, but which contains structures that I am authorized and expected to operate and maintain. To permit our stabilization features to deteriorate would be a default I would find difficult to bear.

We would hope in these difficult times that if the committee cannot see its way clear to include the $2.5 million construction funding in the fiscal year 1986 budget, that you would again insert $200,000 for operation and maintenance of the existing structures so we don't lose the $6 million worth of work already in place and which are such an integral part of the further plans.

Our greatest problem lies in the fact that the main stem dams already in place are doing such a wonderful job of preventing serious flooding in the lower reaches of the river, which is a huge benefit to farmers, businesses, and cities along the lower reaches of the river, but providing us in our reach of the river with more serious erosion, causing loss of farmland, troubles with irrigation intakes, loss of roads, and even buildings in several cases. So we bear severe losses while the lower reaches benefit.

The funding we have requested from the committee and the eventual construction of the Missouri National Recreation River, plus continued operation and maintenance of the existing structures, would do much to balance out this serious inequity in benefits, also providing a very desirable and long-time effect in saving of the few natural areas and natural rivers in our Nation for generations to come.

We would very respectfully ask that this project be funded in the amount of $2.5 million construction and $200,000 operation and maintenance, or at least the $200,000 for operation and maintenance to halt any further deterioration to existing structures.

We thank you for the opportunity to appear before this committee and for the kind treatment you have extended to us and our association of farmers, sportsmen, and environmentalists whose love for and dedication to the land, the river, and our natural resources has brought us to Washington the last 12 years.

We would be happy to answer any questions.

Senator ABDNOR. Thank you, Earl, and you, too, Darrell. We have always enjoyed working with you and your organization. You are a fine bunch of people working for a very worthy cause.

We just wish we always could find the money a little easier than we do, so we could make greater progress on this. I can assure you we know the importance of it. I see what the Missouri River has eaten away at my end out there and it bothers me, too. We will keep working and trying to get all the dollars we can to continue on with this program.

We thank you all for coming in, and particularly knowing that you had to drive over some very, very icy roads to get to Sioux City to catch the airplane.

Mr. ROWLAND. Thank you very much, Mr. Chairman.

[The statement follows:]

STATEMENT OF J.M. PETERSON, PRESIDENT, MISSOURI RIVER BANK STABILIZATION ASSOCIATION

Mr. Chairman and Members of the Sub-Committee:

We greatly appreciate this chance to appear before you on behalf of the Missouri River Bank Stabilization Association to testify regarding the F.Y. 1986 budget. We would like to express our appreciation to your committee for your kindness and consideration to us as we have testified before you for the last twelve years. The funding you have granted us has saved many acres of farmland and much of the scenic beauty along our river that was being lost. We especially wish to thank you for the $200,000 granted us last year for operation and maintenance on the Section 32 structures already in place. This will serve to alleviate some of the problems created by controlling the flooding such as in 1984 in the lower reaches of the river as we stated in our testimony last year.

We would like to request that the Missouri National Recreation Project, which was authorized in 1978 under Section 707 of Public Law 95-625, be included for funding this year. The project was authorized for $21,000,000 to be spent over a period of years. For F.Y. 1985, $2,500,000 is needed for construction and $200,000 for operation and maintenance of the structures already built in this reach of the river under the Section 32 Streambank Erosion Control and Demonstration Act which ended in 1983.

This project is a 59-mile stretch of the Missouri River in Nebraska and South Dakota between Gavin's Point Dam near Yankton, South Dakota and Ponca State Park near Ponca, Nebraska. This is the only uncontrolled stretch of the river between Gavin's Point Dam and the mouth of the river and totally at the mercy of the releases from Gavin's Point Dam which are judged by the needs for flood control, hydropower and navigation. In the October 1984 Status report, the Corps of Engineers states prior to F. Y. 1982, $600,000 had been provided to the Omaha District for advance engineering and design under the Construction, General Appropriation.

If funding is provided in future years, the money could be used effectively to maintain existing and construct new riverbank protection works. The $200,000 Congress added to the F. Y. 1985 appropriation bill for project operation and maintenance would be used to rehabilitate existing Section 32 projects.

The Omaha District has worked out a plan for placing in priority order the projects slated for maintenance. First, an assessment of damages, then results of the survey will be used to place in priority order the Section 32 sites for maintenance. The authority for operation and maintenance of these structures is Section 707 Public Law 95-625 the Missouri National Recreation River Authorization, which states in paragraph (A) provide for the contruction by the United States of such recreation features and streambank stabilization structures as the Secretary of the Army (acting through the Chief of Engineers) deems necessary and advisable in connection with the segment designated by this paragraph, **and for the operation and maintenance of all streambank stabilization structures constructed before the date of enactment of this paragraph and structures constructed after such date, and including both structures constructed under the authority of this section and structures constructed under the authority of any other Act.**

In a memorandum from the director of Civil Works to Omaha Division, Corp of Engineers entitled "Maintenance of Bank Stabilization Structures in the Missouri National Recreation River" he says in summary, "You should take the actions which are within your power to assure that the existing structures are maintained." In the Division response he says, "Operation and Maintenance funding appears to be justified in advance of construction funding." He goes on to say in summary, "I have an existing uncompleted project that has not been funded for construction, but which contains structures that I am authorized and expected to operate and maintain. To permit our stabilization features to deteriorate would be a default I would find difficult to bear."

We would hope in these difficult times that if the committee cannot see its way clear to include the $2,500,000 construction funding in the F. Y. 1986 budget, that you would again insert $200,000 for operation and maintenance of the existing structures so we don't lose the $6,000,000 worth of work already in place and which are such an integral part of the further plans.

Our greatest problem lies in the fact that the main stem dams already in place are doing such a wonderful job of preventing serious flooding in the lower reaches of the river, providing a

cheaper much needed source of hydropower for a large area of the midwest and providing navigation up to Sioux City, Iowa, which is a huge benefit to farmers, businesses and cities along the lower reaches of the river; but providing us in our reach of the river with more serious erosion—causing loss of farm land, troubles with irrigation intakes, loss of roads and even buildings in several cases; so we bear severe losses while the lower reaches benefit.

A good example — in 1983 and 1984 there were large inflows into the system in the lower reaches from the tributaries such as the Platte, Elkhorn, Soldier, Little Sioux and Big Sioux to name a few. In order to prevent serious flooding in southern Iowa, Nebraska and Missouri, Gavin's Point was shut down to one-third or less of normal releases. Whereas, our area was dry and many of our irrigation intakes would not reach the water. In later summer, releases were increased above normal to lower the flood pool behind the dams and accomodate the hydropower and navigation interests. Then increases caused the erosion in our area to accelerate.

The funding we have requested from the Committee and the eventual construction of the Missouri National Recreation River, plus continued operation and maintenance of the existing structures would do much to balance out this serious inequity in benefits, also providing a very desirable and long time effect in saving of the few natural areas and natural rivers in our Nation for generations to come.

We would very respectfully ask that this project be funded in the amount of $2,500,000 construction and $200,000 operation and maintenance, or at least the $200,000 for operation and maintenance to halt any further deterioration to existing structures.

We thank you for the opportunity to appear before this committee and for the kind treatment you have extended to us and our Association of farmers, sportsmen and environmentalists whose love for and dedication to the land, the river and our natural resources has brought us to Washington the last twelve years.

We would be happy to answer any questions you might have.

Thank You.

LETTER FROM ELROY M. HEFNER, STATE SENATOR, NEBRASKA STATE LEGISLATURE

MARCH 26, 1985.

Chairman HATFIELD,
Subcommittee on Energy and Water Development,
Senate Appropriations Committee.

DEAR CHAIRMAN AND APPROPRIATIONS COMMITTEE MEMBERS: Please include this letter in your committee records as being supportive of the Missouri River bank stabilization efforts to obtain funding for the national recreation river. This national recreation river covers the 50-mile segment of the Missouri River from Gavins Point Dam near Yankton, S. Dak., to Ponca State Park near Ponca, Nebr.

I would appreciate very much your acceptance of my letter in lieu of an appearance before your committee, as distance and my involvement with the Nebraska Legislature prohibit my personal testimony at this time.

Sincerely,

ELROY M. HEFNER.

LETTER FROM MARY B. EDELEN, STATE REPRESENTATIVE, SOUTH DAKOTA LEGISLATURE

MARCH 24, 1985.

Chairman HATFIELD,
Subcommittee on Energy and Water Development,
Senate Appropriations Committee,
U.S. Capitol, Washington, DC.

DEAR HONORABLE CHAIRMAN: It has come to my attention that your committee will be holding a hearing for the funding of the Missouri River as a national recreation river.

For those of us who live and represent the areas along the 59-mile stretch of the Missouri River in South Dakota, this is extremely important funding. If this section of the river is ever going to improve, Congress and the administration must support the appropriation of funds.

There is a great need for bank stabilization and erosion control. It is a total waste of our land resources to have the river bank fall into the river every time a boat passes by. Proper management needs to be made a priority of Congress so that this wasteful practice can end.

Please give this measure your very careful attention.

Sincerely,

MARY B. EDELEN.

LETTER FROM TIM JOHNSON, SOUTH DAKOTA STATE SENATOR

MARCH 26, 1985.

Chairman HATFIELD,
Subcommittee on Energy and Water Development,
Senate Appropriations Committee,
Washington, DC.

MR. CHAIRMAN AND COMMITTEE MEMBERS: As a State senator from a district which borders on virtually all of the South Dakota portion of the Missouri National Recreational River, I would like to take this opportunity to express my strong support for funding for the recreational river project.

Please accept this letter in your committee records as evidence of my support.

Sincerely,

TIM JOHNSON.

LETTER FROM GERALD A. CONWAY, STATE SENATOR, NEBRASKA STATE LEGISLATURE

MARCH 29, 1985.

Chairman HATFIELD,
Subcommittee on Energy and Water Development,
Senate Appropriations Committee,
Washington, DC.

DEAR CHAIRMAN: Conservation efforts in Nebraska are necessary for the salvation of the land and the economy. The Missouri River Bank Stabilization Association is a part of this fine effort and I support their work in preserving our Missouri River bank.

Please accept this letter and enter it into the record of the proceedings of the hearing at which it is presented.

Sincerely,

GERALD A. CONWAY.

OPPOSITION—CENDAK PROJECT, SOUTH DAKOTA

STATEMENT OF TOM BARUTH, VICE PRESIDENT, UNITED FAMILY FARMERS

Senator ABDNOR. I am going to now call on Warren Chappelle for the environmental groups, and Tom Baruth for the United Family Farmers.

Would you gentlemen mind coming up together? If we can get you both up here, we won't have any problems finishing our hearing up. We will cover our entire agenda here and wrap it up.

We have heard the positive and now we want to hear the opposition.

Mr. Baruth, do you want to go first?

Mr. BARUTH. Thank you, Senator Abdnor. I thank you for the opportunity to speak this morning. It is indeed a privilege.

I ask that my statement be entered into the record.

Senator ABDNOR. Your entire statement will be made a part of the record.

Mr. BARUTH. Thank you.

[The statement follows:]

STATEMENT OF TOM BARUTH, VICE PRESIDENT, UNITED FAMILY FARMERS

HISTORY

The idea of the Cendak Project originated from the South Dakota Department of Natural Resource Development in 1977. Oahe Project was receiving strong opposition from area farmers and it was becoming apparent to state officials that the Oahe Project would not be built. In their attempt to procure federal funds, the State of South Dakota needed another project plan, one which was sufficiently different from that of Oahe so similar arguments could not be used against it. With this in mind, the Board of Natural Resource Development devised the Cendak plan which was labeled "the most radical alternative possible that still utilized the constructed features of the Oahe Unit".

The Cendak Project is designed to bring Missouri River water eastward into central South Dakota for irrigation purposes. Canals and laterals would be used to convey the water. Center pivot irrigation systems would apply the water to crops.

Because the primary purpose of the project is to stabilize feed supplies for livestock, it is very important to maintain a low cost per acre. Results of two independent studies were discarded as "too costly" when their estimates ranged from $1200 to $1800 per irriaged acre. When federal help was requested, USBR calculated a per acre cost of $2700. Furthermore, the Bureau determined the project would not be feasible unless "specialty crops" were produced.

Since 1982 the State of South Dakota has requested funding for studies of the Cendak Project (Public Law 97-273). Cendak is estimated to cost from $900 to $1500 per acre more than what two previous independent studies showed which were considered "too costly". Again this year, our state legislators sent a resolution to Congress seeking authorization of the Cendak Project. However, where previous resolutions passed unanimously, this year's vote passed only by a margin of 17 (41 to 24). Furthermore, action on the resolution was postponed until after the entire South Dakota legislature came to Washington to ask Congress to cut spending and "get their house in order". South Dakota legislators want you to stop funding other "pork barrel" projects but to provide funds for theirs.

GROWING OPPOSITION

Many farmers were initially interested in the Cendak concept and agreed to "sign up" their lands and pay a nominal fee (25¢ per acre) to study its feasibility. Farmers throughout the area were being "brain-washed" with the idea that drought was the reason for their financial woes. However, as the years passed, the farmers found their debts were increasing even though they were growing "bumper crops". It is becoming obvious that low prices are to blame, not drought. Area farmers realize it is impossible to protect themselves from all of nature's catastrophies. If they become financially burdened by guarding themselves against one, such as drought, they will still be susceptible to others, such as hail, wind, rain, etc. Other farmers "signed up" for the Cendak Project because they were told, by project proponents, that land prices would increase. These farmers never intended to irrigate from the project; they were merely speculators. Finding out the high project cost-per-acre and that a lien will go against their land, these farmers are also "abandoning the ship" and withdrawing their lands from the project.

Beadle County is scheduled to irrigate 89,800 acres or 30% of the 300,000 total acres in phase I of the Cendak Project. Initially, Beadle County was a stronghold for project organizers. However, as the people learn more about the Cendak Project, more and more of the farmers are deciding not to participate in it.

In the November 1984 election, I ran as a candidate from Beadle County for a directorship position on the Cendak Water Development District Board. I based my entire campaign on educating people as to why the Cendak Project should not be built. Issues such as pollution, project costs, school busing problems and alternative water development studies were addressed. On election day 47% of Beadle County farmers in my district voted against the Cendak Project.

In the last state legislative session, which ended in March 1985, a law was passed allowing the formation of the Cendak Irrigation District. As farmers hear and learn of the obligations and powers the irrigation district would have, more and more of them are asking to remove their lands. A surprising note is that not only

are they withdrawing support for the Cendak Project, most of them are joining forces with the United Family Farmers in opposing the project. Protecting the land and guarding against pollution of our underground water supplies and the James River are important issues to those who live on the land.

PROJECT COSTS

The full-scale Cendak Project is designed to irrigate 474,000 acres. USBR cost estimates for this plan total $1.3 billion or $2743 per irrigated acre. This per-acre cost is approximately ten times the current value of non-irrigated land in the project area. Because of the vastness of the project area, much of the land "signed up" may not be suitable for irrigation and would require extensive drainage.

For this reason, as well as the topography of other lands, USBR decided the Cendak Project should be developed in two phases. The first phase would irrigate 300,000 acres, 279,200 acres of which will be "aquifer" lands. The latest cost estimate for Phase I is $822,243,000 or $2696 per acre. It should be noted that the latest per-acre cost estimate, for developing only the "most feasible" 300,000 acres is approximately the same as an earlier study estimate of the entire project. Both estimates are approximately ten times the present value of dry-land in the project area.

In an attempt to reduce project costs, USBR excluded subsurface drainage and wildlife mitigation costs. These are estimated to be $226,000,000 or $753 per acre. This is nearly three times the current selling price of dry-land in the project area.

Additional project costs to be assessed against the landowner are:

Operation, Maintenance and Repair	-	$21 per acre annually
Irrigation Management Service	-	$4.50 per acre annually

When one adds these costs together it equals an amount thirteen times the current value of dry-land in the project area. USBR estimates crop production, at best, to be less than four times the current dry-land yield in the project area. It is very unlikely project farmers will be able to pay for a project which costs thirteen times the present value of land by increasing production four-fold of a crop, such as corn, which is already in surplus.

There appears to be a growing public concern over government programs that subsidize irrigation projects which increase the yield of surplus crops and, at the same time, pay farmers not to produce these same surplus crops.

ENVIRONMENTAL EFFECTS

Another primary concern of project area inhabitants is the effect the Cendak Project will have on the land and water resources.

As mentioned previously, irrigation water would be conveyed through canals and laterals. These "open-ditch" structures will destroy thousands of acres of productive land and cause numerous traveling hardships. A farmer may have to travel several miles to farm the quarter of land directly across the road from his house. In extreme cases, the farmyard may be divided by a canal, splitting the house and barn. School busing will be affected because of "dead ends". School districts would have to purchase more buses or require longer travel time for their students. Public travel may have to be re-routed which may cause the demise of many small towns. Each of these effects would have a serious consequence on the economic well-being of a community.

Another serious environmental catastrophe would be the contamination of drinking water sources. Project "aquifer lands", 279,200 acres of the 300,000 acres included in Phase I, are to be drained by "..pumping of wells to provide a favorable hydraulic gradient in the aquifers, allowing more deep percolation of precipitation and applied water". This means much of the water, along with the fertilizer and pesticides used is expected to filter down into the underground water supply. This action is most certainly going to contaminate the aquifer which is the primary source of drinking water for livestock and farm families. As time passes, this contaminated water will be pumped from the wells, placed in surface drainage structures and delivered to rivers and reservoirs. This eventual spread of pollution will contaminate most of the sources of our present drinking water.

Although USBR disavows any knowledge of what effect this drainage will have on underground water supplies, they concede the possibility of negative impacts on the James River. Their "dilution solution to pollution" is to build a ring dike (not included in project cost estimates) which would allow fresh water to be released into the river during months of "low flow".

Pollution of underground aquifers and surface streams is a very serious national problem. The Natural Resources Defense Council and U.S. Congress are spending large sums of money to stop such contamination. Authorization of the Cendak Project would not be a step in that direction.

PROJECT COSTS

Mr. BARUTH. My name is Tom Baruth. I farm near Alpena, S. Dak., and live in the CENDAK project area. I am speaking to you this morning on behalf of myself as well as for the approximately 2,000 United Family Farmers. Currently, I am serving as vice president of United Family Farmers.

During the last few years, there has been a tremendous amount of pressure exerted on South Dakotans to develop our water or lose it. This cry was heard in both rural and urban areas, primarily because of a slumping agricultural economy. Bureaucrats stated if we had water, we would be guaranteed a crop and the whole State would benefit. I have even heard the statement it is better to sell at a loss than not to have anything to sell.

Senator Abdnor, as a farmer yourself, you know that an agricultural community or State can only be benefited if the commodities produced are sold at a profit. The margin of profit must be great enough to cover all of the expenses incurred by the producer. Our bankruptcy courts are filled with cases where that margin of profit was not enough to cover expenses.

Let us examine some of the costs connected with the CENDAK project. Each irrigator will be expected to pay $2,548 per irrigated acre for project costs. He will have additional charges of $753 per acre for subsurface drainage and mitigation, $880 per acre for operation, maintenance and repair, and $180 per acre for irrigation management services. The total of these costs is $4,361 per irrigated acre. That is how much money the farmer will have to invest in each acre of land he irrigates from the CENDAK project.

Do you think lending institutions will grant loans for this amount using only the land as collateral? I believe the CENDAK project is too costly for family farmers to use for irrigation. It is ideally suited for corporate takeovers who use such investments for tax writeoffs.

ENVIRONMENTAL IMPACT

Another important aspect of the CENDAK project is the environmental effects. As you know, there is a growing trend to protect the environment before it becomes polluted. Phase I of the CENDAK project will irrigate 279,200 acres of aquifer lands. These aquifer lands are particularly appealing to developers because they can be drained by pumping the aquifers instead of having to install subsurface drainage tiles.

However, this easy method of drainage will have a serious impact on drinking water sources. Nearly all farms and small communities in the area utilize the water from the aquifers for domestic use. This water from irrigation will carry fertilizers and pesticides into the underground water supplies. This contaminated water will then be pumped into surface drainage structures and delivered to streams and reservoirs.

Recently there has been considerable news coverage of the Kesterson National Wildlife Refuge in California and the impact drainage water is having on its environment. Well, Senator Abdnor, we South Dakotans certainly don't want a Kesterson in our State.

Because of the tremendously high project cost and negative environmental effects, many former supporters are withdrawing their support from the CENDAK project. Not only are farmers withdrawing their lands, they are joining forces with the United Family Farmers in opposing the project. CENDAK strongholds are eroding away. As farmers learn more about the project, they support it less. That is why it is so important to delay authorization until all of the studies are completed.

The Oahe project gave our State $42 million worth of scars. We don't need more from CENDAK.

I would like to refer also to the recent South Dakota Legislature resolution for the authorization of CENDAK. On the house side it passed by a 41-to-24 margin, which shows substantial opposition to the project.

Although we disagree on the CENDAK issue, Senator Abdnor, I want to commend you on your efforts to benefit South Dakotans. As a taxpaying farmer, I thank you for your work to push corporations who are using farming as a tax writeoff out of farming. They are helping cause low prices and are driving the family farmer off the land.

Because of your interest in and dedication to fellow South Dakotans, I would like to solicit your help in an effort to improve their lives. As you know, many areas in our State are not fortunate enough to have adequate underground water supplies. Other areas have aquifers of poor quality water.

Senator Abdnor, these farms and communities need safe drinking water for their livestock and their homes. They need rural water systems such as WEB. You have heard testimony today concerning the WEB pipeline in north central South Dakota. The Corps of Engineers has done pipeline studies for the east central region of South Dakota. They have even done a cost comparison of different sources of water for many communities.

The problem is that this cost comparison information is not available to our citizens. State bureaucrats are hiding these studies. I would like to get a commitment from you to do everything possible to get this information out. People should be advised of the different options available and the relative costs of each. Can I ask for your help in this matter, Senator Abdnor?

Senator ABDNOR. The State won't provide that to you?

Mr. BARUTH. Yes, sir. I have talked to an individual and the statement he gave me was they did not like the studies.

Senator ABDNOR. They did not what?

Mr. BARUTH. They did not like the studies.

Senator ABDNOR. They didn't like the studies?

Mr. BARUTH. That is the statement he gave me.

Senator ABDNOR. I would be happy to write any agency in the government. We don't want to suppress information. However, I don't know how much pressure I could bring upon State government.

Mr. BARUTH. I would ask that you do exert the pressure that you can. I think you are quite an influential man in the State of South Dakota.

Senator ABDNOR. I wish we had Mr. Neufeld here. I would be happy to ask him. I didn't realize you were having trouble getting information. Are you having the same problem?

Mr. CHAPPELLE. Yes.

Mr. BARUTH. This completes my testimony, Senator Abdnor. I have submitted written material on CENDAK to the Senate Subcommittee on Energy and Water Development. I ask that that be included.

STATEMENT OF WARREN CHAPPELLE, REPRESENTING THE DACOTAH CHAPTER, SIERRA CLUB

Senator ABDNOR. Now go ahead, Mr. Chappelle.

Mr. CHAPPELLE. Mr. Chairman, members of the subcommittee, my name is Warren Chappelle and I live in Pierre, S. Dak. I volunteer my time to and am speaking on behalf of the Dacotah Chapter of the Sierra Club.

Senator ABDNOR. Your entire statement will be put in the record.

Mr. CHAPPELLE. Thank you.

[The statement follows:]

STATEMENT OF WARREN A. CHAPPELLE, DACOTAH CHAPTER EXECUTIVE COMMITTEE, SIERRA CLUB

Testimony of the Dacotah Chapter of the Sierra Club
before the Energy and Water Development Subcommittee
of the Appropriations Committee of the United States Senate
on the WEB, CENDAK, Belle Fourche and Lake Andes Wagner projects
by Warren A. Chappelle
Member of the Executive Committee of the Dacotah Chapter

Mr. Chairman, members of the subcommittee, my name is Warren Chappelle and I live in Pierre, South Dakota. I volunteer my time to and am speaking on behalf of the Dacotah Chapter of the Sierra Club. There are about six hundred fifty members of the Dacotah Chapter. We thank you for the opportunity to present these views today.

The projects under consideration today demonstrate the extremes that exist in South Dakota between water development proposals that, on the one hand,meet pressing needs of large numbers of our citizens and on the other meet the desires of a few speculators and business interests.

The former is the WEB Water Pipeline that will deliver domestic water supplies to thousands of farms and ranches and scores of towns and cities. Having been born and raised in that part of South Dakota and having experienced family health problems that directly resulted from the poor quality of domestic water there, I assure you that WEB is needed and appreciated by the local people. There is no area in South Dakota where all communities are free of water quality or water quantity problems.

The other projects under consideration will provide direct benefits to far fewer people and pose severe environmental and public health problems.

We do not oppose funding for projects or studies that are geared towards addressing human needs and are environmentally sound.

The CENDAK irrigation proposal meets neither of these criteria. The farmers who have spoken to me, and doubtless to you as well, are convinced that the last thing that they need is more acres of land producing more crops thereby increasing the surplus that further depresses the price that they get for their crops.

The real sin of CENDAK is what the project would do to the waters and people of South Dakota. Attached to my testimony is a draft copy of the CENDAK Water Quality Assessment prepared by the South Dakota Department of Water and Natural Resources.

After I received the text of this report, I verified it with Department personnel and was given the charts and tables to which the text refers. I have underlined the sections that are of most concern to our chapter.

If you glance through the report you will note that there is not one page of text that does not have underlined passages. Read any one of those passages and I believe you will understand our concern.

CENDAK would degrade surface and ground water supplies in South Dakota, destroy wetland, woodland and grassland habitats, and significantlyimpact the James River through an increase in total dissolved solids, increased flooding, construction and operation of water storage and regulating facilities, and dredging and channelization. CENDAK threatens to increase water treatment costs for communities, increase plumbing and water using appliance maintenance costs, carry biocides to ground and surface waters, increase sulfate concentrations and increase nitrates and phosphates from fertilizers.

Each of the following sections of the document points to potentially serious consequences if CENDAK is pursued: General Surface and Ground Water, Domestic Water Supply, Biota, Flooding, Aesthetics, Industrial Use, Wetlands, Streams and Lakes, the Missouri River and Livestock Feedlots.

No further monies should be appropriated for CENDAK until the questions raised by this document are answered in full and a means of totally avoiding these impacts becomes a part of the CENDAK Project Plan. The money proposed for CENDAK would be better spent on an effort to deliver domestic water supplies to that part of South Dakota. The United States Army Corps of Engineers has studied that very approach.

My comments on the Belle Fourche refurbishing project are short. The old Belle Fourche Project was one of the first Bureau of Reclamation projects undertaken. In its day it was used as a showcase. It has been unable to return its costs and had a major restructuring of its payback schedule at least once. In addition, project participants have been unable or unwilling to finance maintainance to keep the facility in good condition. Hence, this request for federal funding.

We understand that the Belle Fourche refurbishing effort has been authorized under the Pick Sloan Act. Where is the Fish and Wildlife Coordination Act Report? Where is the Environmental Impact Statement? These are required for new Pick Sloan projects and have not been done.

We are concerned that the Lake Andes Wagner Project will become the "Kesterson Marsh" of the Dakotas. We have naturally high concentrations of selenium in many of the soils of South Dakota. With return flows going to Lake Andes, we are concerned that a situation similar to the one at the Kesterson National Wildlife Refuge may result and threaten human health as well.

An additional concern is whether the objections of the Yankton Sioux Tribe. Has the tribe now allowed canals to be run across their lands.

We feel that any development effort needs to be thought out to its logical conclusion. We need to plan past just getting water to the land for crops and to incorporate immediately, sound and safe ways to handle the contaminated waste waters. We also feel that water needs should be accurately assessed and that we should work towards meeting those needs and not push projects just because a subsidy mechanism is available.

Thankyou.

CENDAK Water Quality Assessment

Information is not available to fully assess the water quality impacts of the CENDAK project. Information used for this analysis consists primarily of historical data on groundwater and surface water quality, the project description of land use conversion, and U.S. Bureau of Reclamation estimates of future water quantity and quality with full development of the 474,000-acre CENDAK project after soil/water equilibrium conditions are reached. Other similar irrigation projects have proven that pre-equilibrium water quality will be significantly worse. The CENDAK project proposed to "phase in" sub-surface drainage systems over a period of years. During the early years of the project water quality may improve because return flows will consist mainly of operational waste; however, with the installation of subsurface drainage, return flows will gradually decrease in quality due to the contribution from deep percolation until equilibrium is reached. Further analysis of pre-equilibrium conditions will be included in advanced studies. Water quality predictions were completed by the Bureau of Reclamation by mass balance analysis of salts and through use of the CHEMEQ model to take into account precipitation and dissolution of salts within the soil profile. Predictions were not made for many important parameters such as nitrates, phosphates, biocides, suspended solids and water temperature. The following assessment therefore makes use of the analysis of impacts to the surface and groundwater uses based on different ranges of water quality.

Although this analysis assumes diversion of Missouri River water with a Total Dissolved Solids (TDS) concentration of 490 mg/l, recent years have seen an increase in the TDS concentration in Lake Oahe. Figure 1 displays the TDS level of the Missouri River at Oahe Dam from 1976 through 1982. The TDS concentration at this point averaged 541 mg/l for the period of October 27, 1981, through June 22, 1982. As all other predictions for TDS and conductivity are based on the quality of the diverted Missouri River water, further analysis is needed of the water quality trends in Lake Oahe.

Project irrigation water was assumed to have the same chemical make-up as Missouri River diversion water (490 ppm TDS) diluted by natural precipitation

FIGURE I

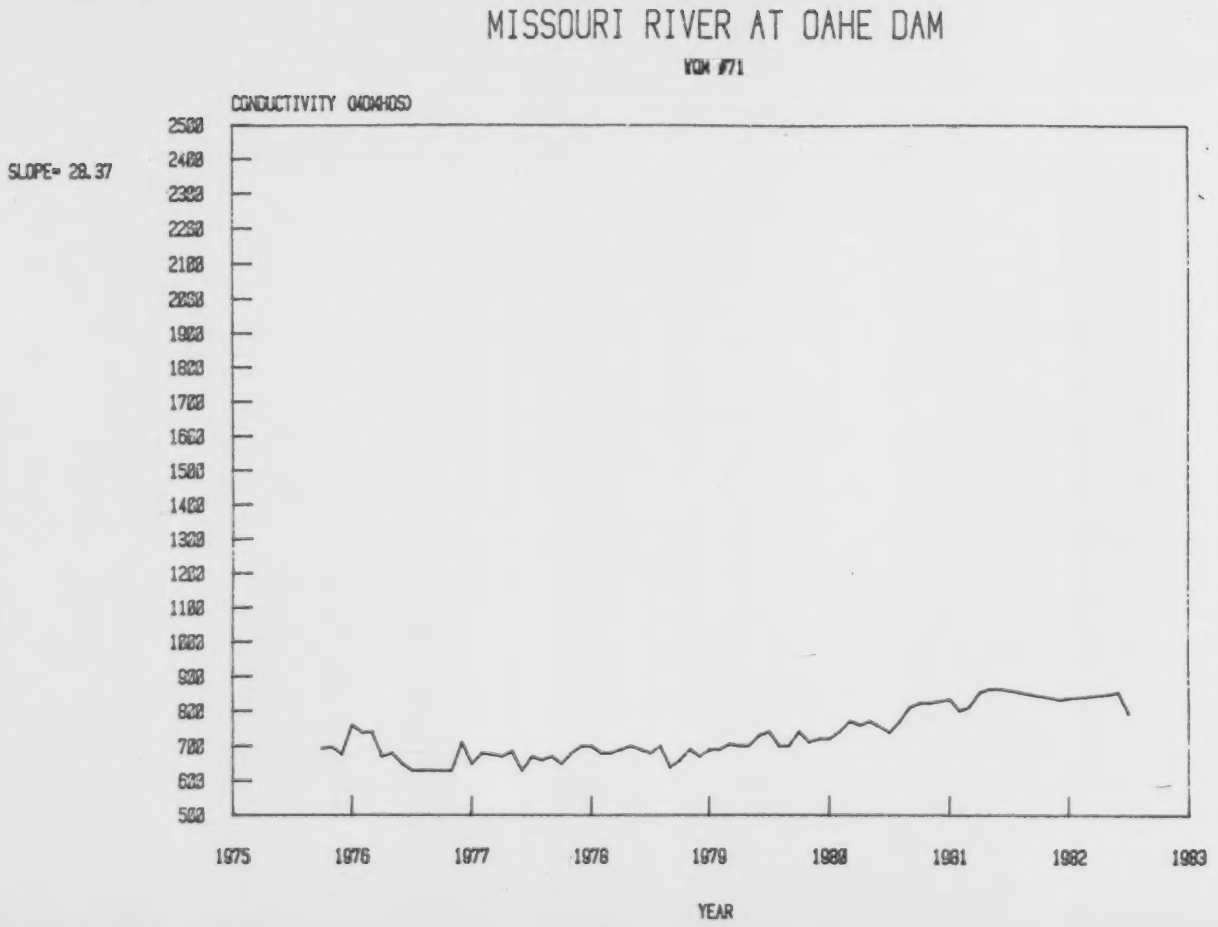
MISSOURI RIVER AT OAHE DAM
YOK #71
CONDUCTIVITY (MICROMHOS)
SLOPE= 28.37
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
1975
1976
1977
1978
1979
1980
1981
1982
1983
YEAR

TABLE 1- CHEMICAL COMPOSITION OF APPLIED WATER & PROJECT RETURN FLOWS

			MASS BALANCE		CHEMEQ SOLUBILITY ANALYSIS			
					CANAL SEEPAGE		DEEP PERCOLATION	
COMPONENT mg/l	MISSOURI R.[1] @ PIERRE	TOTAL SUPP WATER (CW)	CANAL SEEP[2] CF=2	DEEP PERC[3] CF=11	pCO2=10	pCO2=100	pCO2=10	pCO2=100
Ca	56	34	112	381	80[4]	192	85[4]	216[4]
Mg	22	13	44	146	44	44	146	146
Na	69	41	138	459	138	138	459	459
HCO3	189	113	378	1266	282[4]	622	366[4]	763[4]
SO4	210	126	420	1411	126	420	1411	1411
Cl	10	6	20	67	6	20	67	67
TDS	490	290	980	3250	840	1125	2350	2680
EC	738	443	1476	4961	1317	1645	2914	3282
pH	8.1	-	-	-	7.5	6.8	7.5	6.8
SAR	2.1	1.5	3.0	5.1	3.1	3.0	7	5.9

1) FROM WATSTORE- ALL HISTORICAL DATA AVERAGES

2) MASS BALANCE APPLIED TO PROJECT SUPPLY WATER (MISSOURI R. @ PIERRE)- CONCENTRATION FACTOR=2

3) MASS BALANCE APPLIED TO TOTAL WATER SUPPLIED TO CROP (INCLUDES PRECIP)-CONCENTRATION FACTOR =11

4) DECREASE IN CONCENTRATION INDICATES PRECIPITATION OF CaCO3

(TDS:3 ppm) for a resultant concentration of 290 ppm.* A mass balance calculation assuming total conservation of salts (Table 1) resulted in an 11-fold concentration for deep percolation (3,250 ppm TDS) and a 2-fold concentration for canal seepage (980 ppm TDS). The precipitation of $CaCO_3$ was calculated by CHEMEQ resulting in predictions of 2,350-2,680 ppm TDS (deep percolation) and 840-1,125 ppm TDS (canal seepage). Pumped water from aquifer lands averaging from 900-1,400 ppm TDS would contribute 35% of the total return flow with the remainder comprised of operational-wastes (40%) at 500 ppm, deep percolation (20%) and canal seepage (5%). Based on these assumptions and calculations and the volume-weighted average TDS content of the return flows, the CENDAK project (plan 3) is expected to significantly impact the James River and its tributaries (Turtle Creek, Wolf Creek, Cain Creek, Medicine Creek and the South Fork of Snake Creek), and Medicine Knoll Creek in the Missouri River Basin.

Some groundwater supplies may also be significantly impacted depending upon current local water quality in comparison to deep percolation. The extent of this impact will be somewhat lessened if mixing is substantial; however, United States Geological Survey data demonstrate extreme variability in water quality over short distances (TDS currently ranges from 200 to 5,000 mg/l). This situation would not exist if there was substantial mixing within the aquifer.

The James River is assigned the following beneficial uses in the South Dakota Surface Water Quality Standards, ARSD 74:03:04:19: Warm Water Semi-permanent Fish Life Propagation, Limited Contact Recreation, Wildlife Propagation and Stock Watering and Irrigation. The reach upstream of the James River Diversion Dam near Huron is also assigned the beneficial use of Domestic Water Supply. Applicable Water Quality Criteria are shown in Table 2. The classifications of the James River tributaries are shown in Appendix A. Medicine Knoll Creek is classified for the beneficial uses of warm water marginal fish life propagation, limited contact recreation, wildlife propagation and stock watering, and

* All water quality data, assumptions including the need for aquifer pumping, and predictions were furnished by the Bureau of Reclamation and are based on soil-water equilibrium conditions.

irrigation. Tables 3, 4 and 5 indicate that the James River has historically exceeded South Dakota Surface Water Quality Standards for drinking water supplies (1,000 ppm TDS) during the months of January and February at Huron, and during February and March at Redfield. Periodic natural exceedances are recognized; however, the standards were established to prevent additional degradation due to point or nonpoint source discharges.

The 474,000 acre plan will have project returns ranging from 1,000-2,400 ppm (Table 3). The resulting TDS in the James River near Huron would average between 700-2,000 ppm with the highest concentrations occurring during the non-irrigation season due to low flows unless other water management measures as implemented. With the return flows from the 85,000 acre Garrison Diversion Unit, the James River at Huron would exceed the 1,000 ppm TDS standard in February, and return flows from CENDAK would result in TDS concentrations of from 700-1,800 ppm and would equal or exceed 1,000 ppm for every month but April, May and June. The James River at Redfield, not including the flows from the Garrison Diversion Unit, would average from 700-2,000 ppm TDS with the input of CENDAK return flows. Concentrations would equal or exceed 1,000 ppm for all months except April, May, June, July and August. These predictions are based on mean monthly water quality and flow data as well as careful management of aquifer pumping to ensure that an adequate mix is maintained between pumped groundwater, operational waste and canal seepage.

Examination of the annual total values for flow and TDS on the James River at Huron (with and without the Garrison Diversion Unit) indicates that CENDAK return flows will result in approximately doubling the flows and increasing total salt concentrations by a factor of 1.1 to 2.4. Table 6 presents the TDS data at Huron, with and without CENDAK return flows, converted to conductivity in micromhos per centimeter. Without CENDAK return flows or those from the Garrison Diversion Unit (GDU), conductivities can be expected to range from 800-1,918 micromhos per centimeter. The addition of CENDAK return flows would elevate this range to approximately 1,047-2,737 micromhos per centimeter. With the increased flows of the GDU, the ranges would be somewhat less due to dilution. These predictions are based on mean monthly water quality and, consequently will not precisely reflect the maximum ranges experienced.

Historic conductivities in the James River at Huron have reached a maximum of over 3,700 micromhos per centimeter (umhos/cm). Maximum conductivities will occur primarily during the non-irrigation season and therefore should not create a major problem for downstream irrigators. However, the South Dakota Department of Agriculture advises that should conductivities reach 2,500-3,500 umhos/cm and the following conditions exist:

1. pumping costs are such that sufficient water to periodically leach salts is
2. subsoil internal drainage is poor or questionable:

then marginal downstream soils could become incompatible for irrigation, could require more extensive management or could result in decreased yields. At the same time, increased flows in the James River could provide sufficient water for downstream irrigators more consistently. Accurate analyses of impacts to irrigated agriculture are dependent upon site specific variables such as drainage, soil type and SAR of the applied water. For this reason the Department of Agriculture requires soil/water compatibility tests from those who apply for a water right for irrigation. Consequently, detailed analysis of impacts to downstream irrigators will require additional information on a site-specific basis.

Domestic Water Supply

Communities utilizing the James River as a municipal water supply may require more extensive treatment to deliver the same water quality they now have. Huron currently treats for hardness by lime softening but does not treat for TDS removal. They also treat occasional taste and odor problems when they occur. Project development may contribute to increased taste and odor problems as a result of increased organic matter and algae blooms and would require additional treatment. It is possible, however, that taste and odor problemsmay be reduced by increased flows.

Municipal supplies in the project area with the exceptions of Huron and Mitchell, are groundwater supplies and are generally of poor quality (Table 17). Nine of the eleven supplies exceed the 1,000 mg/l TDS, ten exceed the recommended limit of 250 mg/l for SO_4, and at least six exceed recommended limits for those on moderate sodium-restricted diets. If CENDAK supply waters

were found to be cost-effective for use by these municipalities and were to be supplied as a part of the CENDAK project, a significant improvement in the quality of these supplies would be possible.

Encrustation and corrosion of metallic surfaces by water containing dissolved solids is well known. Damage in household systems will occur to water piping, wastewater piping, water heaters, faucets, toilet flushing mechanisms, garbage grinders, and both clothes and dishwashing machines but cannot be quantified with available information.

Although little data is available indicating the presence of pesticides or herbicides in James River water or sediments, the potential exists for irrigation return flows to carry measurable quantities of these biocides which may require additional water quality monitoring and treatment costs. Pesticides can be carried into a watercourse by erosion of soil particles to which the pesticide is attached, volute in runoff, or by poor application techniques. Only one surface water station has been monitored for pesticides in the past. The James River at Oakes was monitored for 17 pesticides from 1969 through 1972. Only 2, 4-D was found to be present avereging .29 mg/l with a maximum value of 2.0 mg/l. Sediment cores from the length of the James River were analyzed by the Corps of Engineers in 1981. Trace levels of 7 chlorinated pesticides as well as polychlorinated biphenyls were found to be present.

Individual domestic supplies (groundwater wells) affected by deep percolation will experience increases in total salts relative to the present quality of the water supply. The average quality of the major aquifers in the project area is as follows:

Tulare Aquifer - 1,200 mg/l TDS

Warren Aquifer - 1,300 mg/l TDS

Highmore Aquifer - 900 mg/l TDS

Grand Aquifer - 1,400 mg/l TDS.

Deep percolation water ranging from 2,350-2,680 ppm TDS (Table 1) could result in long term degradation of domestic groundwater with added health implications. Physicians recommend restriction of sodium intakes for a significant portion of the population, including persons suffering from hypertension, edema associated

with congestive heart failure and women with toxemias of pregnancy. Those on very restricted sodium diets are cautioned not to exceed 20 mg/l in drinking or cooking water and those on moderately restricted diets are cautioned not to exceed 270 mg/l. If the water supply were to exceed these amounts naturally or due to the influx of deep percolation, these individuals would have switch to distilled or deionized water. Table 1 indicates that the sodium concentration in deep percolation water will be 459 ppm. Additional studies will be necessary to determine the extent of mixing, mass balances, migration, etc., as a result of deep percolation influx to groundwater. The sulfate concentration in deep percolation waters will be 1,411 ppm. On the basis of taste and laxative effects, it has been recommended that sulfate not exceed 250 mg/l in drinking water supplies. Generally, waters from 2,000-4,000 ppm TDS are not palatable, may not quench thirst, and may have laxative action on new and intermittent users.

Increased fertilizer application coupled with leeching requirements may result in violation of the nitrate standard for domestic water supplies (10 mg/l). Nitrate levels in excess of 10 mg/l are known to cause methemoglobinemia (Blue Baby Disease) when ingested by infants. Unsubstantiated studies have linked nitrite (the reduced form of nitrate) to the formation of nitrosamines, some of which are known carcinogens.

Certain water soluble biocides have the potential of directly entering groundwater supplies through infiltration of the volute during groundwater recharge. Little or no information is available on the presence or absence of pesticides in the groundwater supplies of the project area.

South Dakota possesses a non-degradation statute (SDCL 34A-2-22) which makes it unlawful to reduce the quality of any waters of the State below that level existing on March 27, 1973. However, the discharge of wastes may be allowed if such a discharge is found justifiable by the Board of Water Management, following public hearings, as a result of necessary economic or social development (SDCL 34A-2-24) and the discharge will not result in a violation of applicable water quality standards.

Biota

If no further water rights are issued on the James River, doubled flows will result which will result in decreased summer temperatures and increased aquatic habitat availability; however, increased salt concentrations may, under certain conditions, provide increased stress on sensitive species.

Increases in herbicide and pesticide concentrations may affect reproductive or developmental stages of aquatic biota. Bioaccumulation may occur in organisms higher in the food web resulting in lack of reproductive success, developmental stress or levels toxic for human consumption.

Increased phosphorus from fertilizer application will be transported as colloidal material, will be dissolved, or will be bound to sediment particles. Sediment enrichment may result in increased algae growth, reduced dissolved oxygen concentrations, and increased Biochemical Oxygen Demand in receiving streams since the James River has historically had extremely slow flows and stagnant pools due to the very small gradient, increased flows could act to minimize the impact of sediment enrichment, algal blooms and decreased visibility.

It has been reported that about 95% of the inland waters of the United States supporting a good mixed fish fauna have TDS concentrations less than 400 ppm. Limiting concentrations for fish are not definitely known, but may range from 5,000 to 10,000 ppm TDS dependant on species and prior acclimation. Fish can become acclimatized slowly to higher salinities, but fish in waters of low salinity cannot survive sudden exposure to high salinities. Sudden changes are not expected from operation of the irrigation facilities.

Flooding

Average annual flows in the James River would be nearly doubled. This increase translates into average monthly flows of between 500-980 ft^3/s in the James River during the irrigation season. Channel capacity of the James River has been rated at 3,600 ft^3/s at Huron, South Dakota, and should accommodate project return flow. Flow impacts would be more significant in the downstream area near

Mitchell, South Dakota, where channel capacity decreases to 1,000 ft^3/s. Flows during the irrigation season would approach this capacity, particularly during periods of high runoff when operational wasting is at a maximum. There are no current streamflow records for the James River near Mitchell, South Dakota. Th nearest station is about 20 miles upstream at Forestburg. Based on historical data (1963-1981), the 50 percent exceedance flows average about 200 ft^3/s between April and July. The 20 percent exceedance flows average about 800 ft^3/s over the same period. Historical flows in the James River at Huron are similar. The James River is already prone to annual flooding particularly in Yankton County. It may be assumed that with the near doubling of base flows and unless channel capacity is increased, return flows will result in localized flooding south of Mitchell leading to increased erosion and streambank instability. Possible water quality impacts would include: increased suspended and dissolved solids, increased sediment deposition, nutrient loading and BOD; and decreased channel capacity in the southern portion of the James River and at the confluence with the Missouri River. Additional studies will have to be completed to update current information on channel capacities and the need, if any, for channel modification.

Aesthetics

Increased flows should have a positive impact on aesthetics with the potential of eliminating periods of no flow or isolated pools. Decreased water quality could have a limited negative effect on aesthetics due to increased nutrient loadings resulting in increased algal growth.

Stock Watering and Wildlife Propagation

Livestock and poultry may be injured by water containing excessive dissolved solids. Continuous use may result in general loss of condition, weakness, scouring, lack of thrift, reduced milk or egg production, bone degeneration and death. TDS concentrations are not expected to maintain levels sufficient for this range of effects; however, during unusual conditions, a sudden change to highly mineralized waters causes acute distress and diarrhea of varying

severity. The limits of tolerance depend upon the salts present, animal species, diet, age, physiological condition, season of year, climate, etc. Generally, symptoms do not become evident until TDS concentrations exceed 2,000 ppm. Salinities in excess of 3,000 ppm may result in more acute symptoms for some species and initial refusal to drink.

Industrial Use

Dissolved solids in industrial waters can cause foaming in boilers and interference with clearness, color or taste of many finished products. The Pepsi Cola Bottling Company in Huron has its own water treatment facility to treat finished water from the city. A spokesman for the company indicated that decreased quality water furnished by Huron requires increased treatment costs particularly when taste and odor problems are evident. High concentrations of dissolved solids may also accelerate scaling.

Wetlands

The amount of wetland habitat estimated to be lost is 31,000 acres. Project beneficiaries are expected to provide "in-kind" habitat replacement for wetlands on their own property. Our Nations Wetlands--An Interagency Task Force Report, 1978 states that, "Because wetland ecosystems hold nutrients, they simultaneously act as a pollution filtration system". In addition, wetlands act as natural vegetative filters for suspended sediment. The Soil Conservation Service often times regards areas such as prairie potholes as being non-sediment contributors for a given receiving stream or lake. Consequently, the loss of significant wetland acreage would result in increased runoff, sediment delivery and nutrient loading to receiving bodies of water.

TABLE 2: SURFACE WATER QUALITY STANDARDS
74:03:02:30. Beneficial uses of public waters established.

Parameters:	Domestic water supply	Cold water permanent fish life propagation	Cold water marginal fish life propagation	Warm water permanent fish life propagation	Warm water semipermanent fish life propagation	Warm water marginal fish life propagation	Immersion recreation	Limited contact recreation	Wildlife propagation and stock watering	Irrigation waters (May 15 - Sept. 30)
	1	2	3	4	5	6	7	8	9	10
Alkalinity, Total/$CaCO_3$									750	
Arsenic	.05									
Barium	1.0									
Cadmium	.01									
Chloride	250	100								
Chlorine, Total Residual		.02	.02	.02	.02	.02				
Chromium	.05									
Coliform /100ml	5000									
Coliform Fecal /100ml							200	1000		
Conductivity micromhos/cm @ 25°C									4000	2500
Cyanide, Free		.005	.005	.005	.005	.005				
Cyanide, Total		.02	.02	.02	.02	.02				
Hydrogen Sulfide		.002	.002	.002	.002	.002				
Lead	.05									
Mercury	.002									
Nitrogen, Nitrates as N	10								50	
Nitrogen, Ammonia as N		.02	.02	.04	.04	.05				
Oxygen, Dissolved		6.0	5.0	5.0	5.0	4.0	5.0	5.0		
DO - in spawning areas		7.0		6.0*						
PH	6-9	6.6-8.6	6.5-8.5	6.5-9	6.5-9	6-9	6.5-8.5	6-9	6-9.5	
Polychlorinated biphenyls		.000001	.00000	.00000	.00000	.00000				
Selenium	.01									
Sodium, absorption ratio										10
Solids, suspended		30	90	90	90	150				
Solids, Total dissolved	1000								2500	
Sulfate	500									
Temperature		65	75	80	90	90				

TABLE 3- JAMES RIVER NR. HURON 474,000 A.PLAN (315,700 A.AQUIFER, 102,200 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL
Historical[1] Flow													
Avg Flow(AF)	1200	1030	19,470	47,480	29,340	26,590	16,730	11,930	4230	2000	1970	1890	
(ft^3/s)	20	20	320	800	480	450	270	190	70	30	30	30	2710
Avg TDS(mg/l)	1150	1370	820	510	610	660	660	710	750	820	840	950	8850
Project Returns													
Avg Flow(AF)	2380	1190	1190	10,450	24,070	25,260	25,260	25,850	25,850	4170	2380	2380	
(ft^3/s)	40	20	20	180	400	420	420	430	430	70	40	40	
Avg TDS(mg/l)	2400	2400	2400	1400	1,000	1,100	1,100	1,100	1,100	2400	2400	2400	
Resultant Flow in James R.													
Avg Flow(AF)	3580	2220	20,660	57,930	53,410	51,850	41,990	37,780	30,080	6170	4350	4270	
(ft^3/s)	60	40	340	980	880	870	690	620	500	100	70	70	5220
Avg TDS(mg/l)	2000	1900	900	700	800	900	900	1,000	1,100	1900	1700	1800	15600

1) Based on 1944-1982 Data

TABLE 4- JAMES RIVER NR. HURON- w/ 85,000 A. GARRISON DIVERSION UNIT

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL
James R. @ Huron[1]													
Avg Flow AF	2950	2190	18,320	40,070	32,200	21,280	15,140	12,200	4670	2650	3320	3665	
(ft^3/s)	50	40	300	670	520	360	250	200	80	40	60	60	2530
Avg TDS mg/l	970	1090	860	560	600	660	730	690	770	750	850	890	9420
Project Returns													
Avg Flow AF	2380	1190	1,190	10,450	24,070	25,260	25,260	25,850	25,850	4170	2380	2380	
(ft^3/s)	40	20	20	180	400	420	420	430	430	70	40	40	
Avg TDS mg/l	2400	2400	2,400	1,400	1,000	1,100	1,100	1,100	1,100	2400	2400	2400	
Resultant Flow in James R.													
Avg Flow AF	5330	3380	19,510	50,520	56,270	46,540	40,400	38,050	30,520	6820	5700	6040	
(ft^3/s)	90	60	320	850	920	780	670	630	510	110	100	100	5140
Avg TDS mg/l	1600	1600	1,000	700	800	900	1,000	1,000	1,000	1800	1500	1500	

1) Includes Effects of 85,000 A. GDU

TABLE 5- JAMES RIVER NR. REDFIELD- 85,000 A. GDU NOT INCLUDED

(474,000 A. PLAN- 191,600 A. AQUIFER, 64,800 NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Historical[1] Flow													
Avg Flow AF	730	350	8730	38,750	36,610	22,390	16,450	11,380	4040	2000	2020	1900	
(ft^3/s)	10	10	140	650	600	380	270	190	70	30	30	30	
Avg TDS mg/l	910	1180	1050	513	510	570	640	540	760	540	580	540	
Project Returns													
Avg Flow AF	1480	740	740	6360	14,740	15,480	15,480	15,850	15,850	2600	1480	1480	
(ft^3/s)	30	10	10	110	250	260	260	270	270	40	30	30	
Avg TDS mg/l	2400	2400	2400	1400	1,000	1,100	1,100	1,100	1,100	2400	2400	2400	
Resultant Flow in James R.													
Avg Flow AF	2210	1090	9470	45,110	51,350	37,870	31,930	27,230	19,890	4600	3500	3380	
(ft^3/s)	40	20	150	760	850	640	530	460	340	70	60	60	
Avg TDS mg/l	1900	2000	1200	600	700	800	900	900	1000	1600	1300	1400	

1) Based on 1950-1982 Period of Record

		W/O CENDAK		W/ CENDAK	
		.55*	.7**	.55	.7
W/ GDU	MIN.	1120	800	1272	1000
	MAX.	1982	1557	3272	2571
W/O GDU	MIN.	927.	729	1272	1000
	MAX.	2090	1642	3636	2857

TABLE 6. PREDICTED CONDUCTIVITIES- JAMES RIVER AT HURON, S.D. (WITH & WITHOUT CENDAK & GARRISON DIVERSION FLOWS)

·ALL CONDUCTIVITIES IN MICROMHOS/CM
* MIN FACTOR FOR CONVERSION OF TDS TO CONDUCTIVITY
** MAX FACTOR FOR CONVERSION OF TDS TO CONDUCTIVITY

"in-kind" replacement would have to be designed to match naturally developed wetlands and their roles as sediment and nutrient traps; otherwise nutrients and sediment would eventually enter lakes and streams in the project area with significant environmental degradation.

The loss of existing wetlands might also directly affect remaining wetlands by allowing sediment deposition and nutrient loading to accelerate filling in and eventual loss.

To the extent that existing wetland acres are not replaced for mitigation by restoration of drained wetlands or are not created in natural drainageways, the above impacts will occur.

Streams and Lakes

Land disturbing activities such as construction of borrow pits, access roads and camps, waste material disposal, diversion of streams, removal of cofferdams, removal of vegetation and earthwork in or adjacent to streams will temporarily increase turbidity and sediment yield and adversely affect instream biota. Long term effects could result from sediment deposition and nutrient loading including loss of stream channel and lake capacities with consequent lowered dissolved oxygen, increased algal blooms and loss of aquatic habitat. Long term impacts of this nature could also occur as a result of the conversion of approximately 100,000 acres of grassland to crop land. Current mitigation plans call for replacement of 37,000 of these acres leaving a net conversion of 66,000 acres which will be more susceptible to erosion.

Direct adverse water quality impacts to the tributaries (Medicine, Snake, Turtle, Wolf, Cain and Medicine Knoll Creeks) are expected to be more severe than for the James River. These streams are not classified as domestic water supplies and therefore exceedance of the 1,000 ppm TDS standard is not directly applicable except as related to the impacts discussed earlier to the James River. However, due to the intermittent nature of these streams, the degraded quality of return flows will be less attenuated by natural flows. Impacts on irrigation, biota, stockwatering and wildlife propagation will be more significant than those occurring in the James River due to increases in salinity, biocides, nutrient loading, and sedimentation.

Tables 7 through 16 reflect aquifer, non-aquifer and resultant return flows to these tributaries. Limited historical water quality data is available only on Medicine Creek, Turtle Creek near Tulare, and Snake Creek. What data is available demonstrate highly variable water quality with TDS concentrations commonly exceeding 1,000 ppm when flows are low. The addition of significant return flows will elevate TDS concentrations substantially. Mean monthly TDS averages for every tributary having historical water quality data has been estimated to range from 300 to 2,400 ppm. The mean TDS value for every month will exceed 1,000 ppm except when natural flows greatly exceed irrigation return flows.

TABLE 7- CAIN CREEK 474,000A. PLAN (45,400 A. AQUIFER, 17,100 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Non-Aquifer Return Flows													
Avg Flow AF	380	190	190	190	1230	1410	1410	1510	1510	660	380	380	9400
(ft^3/s)	6	3	3	3	20	20	20	25	25	10	6	6	
Avg TDS mg/l	2390	2380	2380	2380	1270	1370	1410	1450	1450	2380	2430	2390	
Aquifer Return Flows													
Avg Flow AF	-	-	-	1330	2350	2350	2350	2350	2350	-	-	-	13100
(ft^3/s)	-	-	-	20	40	40	40	40	40	-	-	-	
Avg TDS mg/l	-	-	-	1300	950	950	950	950	950	-	-	-	
Total Returns													
Avg Flow AF	380	190	190	1520	3580	3760	3760	3860	3860	660	380	380	22500
(ft^3/s)	7	4	4	30	60	60	60	60	60	10	7	7	
Avg TDS mg/l	2400	2400	2400	1400	1100	1100	1100	1100	1100	2400	2400	2400	

TABLE 8- TURTLE CREEK ABOVE CONFLUENCE W/ WOLF CREEK 474,000 A. PLAN
(43,200 A. AQUIFER, 10,100 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Non-Aquifer Return Flow													
Avg Flow AF	270	130	130	130	880	1010	1010	1080	1080	470	270	270	6700
(ft^3/s)	5	2	2	2	15	17	17	18	18	8	5	5	
Avg TDS mg/l	2380	2380	2380	2380	1270	1370	1410	1450	1450	2380	2430	2390	
Aquifer Return Flows													
Avg Flow AF	-	-	-	1270	2240	2240	2240	2240	2240	-	-	-	12,400
(ft^3/s)	-	-	-	21	38	38	38	38	38	-	-	-	
Avg TDS mg/l	-	-	-	1200	900	900	900	900	900	-	-	-	
Total Return													
Avg Flow AF	270	130	130	1400	3120	3250	3250	3320	3320	470	270	270	19,100
(ft^3/s)	5	2	2	20	50	50	50	60	60	8	5	5	
Avg TDS mg/l	2400	2400	2400	1300	1000	1000	1000	1100	1100	2400	2400	2400	

TABLE 9- MEDICINE CREEK NR. ZELL, SOUTH DAKOTA 474,000 A. PLAN
(25,100 A. AQUIFER, 9800 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Historical[1] Flow													
Avg Flow AF	0	60	2090	1350	380	380	270	90	30	50	10	20	3380
(ft^3/s)	0	1	34	22	6	6	4	2	0.5	0.8	0.1	0.2	
Avg TDS mg/l[2]	1360	900	300*	400*	950	1030	970	950	1200*	1210	1110	1260	
Project Returns													
Avg Flow AF	220	100	100	840	2000	2100	2100	2160	2160	380	220	220	12500
(ft^3/s)	4	2	2	10	30	40	40	40	40	10	4	4	
Avg TDS mg/l	2400	2400	2400	1400	1100	1100	1100	1100	1100	2400	2400	2400	
Resultant Flow													
Avg Flow AF	220	160	2190	2190	2380	2480	2370	2250	2190	430	230	240	15800
(ft^3/s)	5	5	40	40	40	50	40	40	40	10	5	5	
Avg TDS mg/l	2400	1800	400	800	1100	1100	1100	1100	1100	2300	2300	2300	

1) Based on 1960-1981 Data
2) Based on 51 Total Analyses
* Estimated

TABLE 10- WOLF CREEK 474,000 A. PLAN (101,600 A. AQUIFER, 17,300 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Conventional Drainage													
Avg Flow AF	540	270	270	270	1760	2030	2030	2170	2170	950	540	540	13540
Avg TDS mg/l	2390	2380	2380	2380	1270	1370	1410	1450	1450	2380	2430	2390	
Aquifer Pump													
Avg Flow AF	0	0	0	2980	5250	5250	5250	5250	5250	0	0	0	29260
Avg TDS mg/l	-	-	-	1200	900	900	900	900	900	-	-	-	
Total Returns													
Avg Flow AF	540	270	270	3250	6640	6910	6910	7050	7050	950	540	540	42800
(ft^3/s)	10	5	5	40	110	120	120	120	120	20	10	10	
Avg TDS mg/l	2400	2400	2400	1400	1100	1100	1100	1100	1100	2400	2400	2400	

TABLE 11- TURTLE CREEK NR. TULARE 474,000 A. PLAN
(144,800 A. AQUIFER, 27,400 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Historical Flow[1]													
Avg Flow AF	10	20	4490	4060	490	370	120	20	0	3	10	10	9600
(ft^3/s)	0.2	0.4	73	66	8	6	2	0.3	0	0.05	0.1	0.2	
Avg TDS[2] mg/l	1040	1090	320*	380	400	500	520	560	-	-	780	1010	
Project Returns													
Avg Flow AF	860	400	400	4650	10130	10530	10530	10740	10740	1420	810	810	61900
(ft^3/s)	10	10	10	80	170	180	180	180	180	20	10	10	
Avg TDS mg/l	2400	2400	2400	1300	1000	1000	1100	1100	1100	2400	2400	2400	
Resultant Flow													
Avg Flow AF	820	420	4890	8710	10620	10900	10650	10760	10740	1420	820	820	71500
(ft^3/s)	10	10	80	150	180	190	180	180	180	20	10	10	
Avg TDS mg/l	2400	2300	500	900	1000	1000	1100	1100	1100	2400	2400	2400	

1) Based on 1953-1981 Data
2) Based on 30 Total Analyses
* Estimated

TABLE 12- TURTLE CREEK NR. TULARE 474,000A. PLAN
(144,800 A. AQUIFER, 27,400 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Non-Aquifer Return Flows													
Avg Flow AF	810	400	400	400	2640	3040	3040	3250	3250	1420	810	810	20290
(ft^3/s)	14	7	7	7	44	51	51	55	55	24	14	14	
Avg TDS mg/l	2390	2380	2380	2380	1270	1370	1410	1450	1450	2380	2380	2390	
Aquifer Return Flow													
Avg Flow AF	-	-	-	4250	7490	7490	7490	7490	7490	-	-	-	41700
(ft^3/s)	-	-	-	71	126	126	126	126	126	-	-	-	
Avg TDS mg/l	-	-	-	1210	910	910	910	910	910	-	-	-	
Total Returns													
Avg Flow AF	810	400	400	4650	10130	10530	10530	10740	10740	1420	810	810	61990
(ft^3/s)	10	10	10	80	170	180	180	180	180	20	10	10	
Avg TDS mg/l	2400	2400	2400	1300	1000	1000	1100	1100	1100	2400	2400	2400	

TABLE 13- SNAKE CREEK NR. ASHTON, SOUTH DAKOTA 474,000 A. PLAN
(13,300 A. AQUIFER, 24,300 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Historical[1] Flow													
Avg Flow AF	43	0	3750	7285	1720	1107	1045	369	184	18	6	0	17530
(ft^3/s)	0.7	0	61	151	28	18	17	6	3	0.3	0.1	0	
Avg TDS mg/l	-	-	400*	240*	570	540	520	450	520	800*	-	-	
Project Returns													
Avg Flow AF	390	190	190	580	1950	2150	2150	2240	2240	680	390	390	13500
(ft^3/s)	7	4	4	10	30	40	40	40	40	10	7	7	
Avg TDS mg/l	2400	2400	2400	1700	1200	1300	1300	1300	1300	2400	2400	2400	
Resultant Flow													
Avg Flow AF	430	190	3940	9860	3670	3260	3200	2610	2420	700	400	390	31030
(ft^3/s)	8	4	60	160	60	60	60	50	40	10	10	10	
Avg TDS mg/l	2400	2400	500	300	900	1000	1000	1200	1200	2400	2400	2400	

1) Based on 1956-1981 Data
2) Only 20 Analyses Available
* Estimate

TABLE 14- SOUTH FORK SNAKE CREEK 474,000A. PLAN
(13,300 A. AQUIFER, 24,300 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Non-Aquifer Return Flows													
Avg Flow AF	390	190	190	190	1260	1460	1460	1550	1550	680	390	390	9700
(ft^3/s)	7	4	4	4	21	25	25	26	26	11	7	7	
Avg TDS mg/l	2390	2380	2380	2380	1270	1370	1410	1450	1450	2380	2430	2390	
Aquifer Return Flows													
Avg Flow AF	-	-	-	390	690	690	690	690	690	-	-	-	3830
(ft^3/s)	-	-	-	7	12	12	12	12	12	-	-	-	
Avg TDS mg/l	-	-	-	1400	1000	1000	1000	1000	1000	-	-	-	
Total Returns													
Avg Flows AF	390	190	190	580	1950	2150	2150	2240	2240	680	390	390	13500
(ft^3/s)	7	4	4	10	30	40	40	40	40	10	7	7	
Avg TDS mg/l	2400	2400	2400	1700	1200	1300	1300	1300	1300	2400	2400	2400	

TABLE 15- MEDICINE KNOLL CREEK NR. BLUNT, SOUTH DAKOTA 474,000 A. PLAN
(33,400 A. AQUIFER, 6800 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Historical Flow													
Avg Flow AF	0	100	1480	1620	770	570	80	180	30	4	4	2	4840
(ft³/s)	0	2	25	28	13	10	1	3	-	-	-	-	
Avg TDS mg/l	NO DATA												
Project Returns	-												
Avg Flow AF	190	100	100	1080	2360	2460	2460	2510	2510	340	190	190	14450
(ft³/s)	3	2	2	20	40	40	40	40	40	6	3	3	
Avg TDS mg/l	2400	2400	2400	1000	900	900	900	1000	1000	2400	2400	2400	
Resultant Flow													
Avg Flow AF	190	200	1580	2700	3130	3030	2540	2690	2540	340	190	190	19290
(ft³/s)	3	3	30	50	50	50	40	40	40	10	3	3	
Avg TDS mg/l	NO DATA												

TABLE 16- MEDICINE KNOLL CREEK 474,000 A. PLAN
(33,400 A. AQUIFER, 6800 A. NON-AQUIFER)

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS
Non-Aquifer Return Flows													
Avg Flow AF	190	100	100	100	630	730	730	780	780	340	190	190	4850
(ft³/s)	3	2	2	2	10	12	12	13	13	6	3	3	
Avg TDS mg/l	2390	2380	2380	2380	1270	1370	1410	1450	1450	2380	2430	2390	
Aquifer Return Flows													
Avg Flow AF	-	-	-	980	1730	1730	1730	1730	1730	-	-	-	9600
(ft³/s)	-	-	-	16	29	29	29	29	29	-	-	-	
Avg TDS mg/l	-	-	-	900	730	730	730	730	730	-	-	-	
Total Returns													
Avg Flow AF	190	100	100	1080	2360	2460	2460	2510	2510	340	190	190	14450
(ft³/s)	3	2	2	20	40	40	40	40	40	6	3	3	
Avg TDS mg/l	2400	2400	2400	1000	900	900	900	1000	1000	2400	2400	2400	

Flooding is not expected to be a significant problem; however, no data is available on tributary channel capacities and therefore the potential impacts of increased soil saturation combined with heavy natural runoff and CENDAK return flows of up to 180 cfs (Turtle Creek near Tulare) need to receive additional study.

Weed control on project rights-of-way holds the potential for spillage or runoff of applied herbicide to drainage waters.

The average annual diversion of 754,000 ac. ft. from Oahe Reservoir amounts to approximately 5% of the long-term average flow of the Missouri River past Oahe Dam. Since return flows will not accrue to the Missouri River above Oahe Dam, no adverse water quality impacts are expected from this source; however, decreased flows may have adverse impacts on aquatic habitat availability and spawning success in the river.

The magnitude of this diversion might be expected to decrease water quality of the lake (e.g. TDS, suspended solids, etc.).

Other power sources, possibly with thermal discharges, may have to be developed to supply additional power demands due to CENDAK. This increased thermal generation could adversely impact receiving waters by increasing thermal stress on aquatic organisms.

Livestock Feedlots

Increased feed production from irrigation may result in more confined feedlot operations. There are no state funds for cost sharing feedlot waste facilities federal ACP funds are scarce and limited to $3,500.00 per operator. As a result, adequate waste control for livestock concentrations does not presently exist, and increased livestock production will multiply the problem. Direct runoff from feedlots can result in organic, nutrient, and bacterial contamination of surface waters. Infiltration of livestock waste can also result in nitrate and fecal coliform contamination of groundwater supplies.

CITY	TDS	NA+	CONDUCTIVITY	SO4
Broadland	2174	179	2544	1240
Blunt	1181	80.4	1855	260
Faulkton	1443	486	2288	354
Harrold	619	65.8	840	131
Highmore	1241	128	1650	415
Huron	1103	330	1674	355
Miller	2164	346	2601	1145
Mitchell	593	74.6	941	253
Redfield	2123	660	2860	1040
ST. Lawrence	1320	378	2028	460
Virgil	2274	304	2704	1165

TABLE 17. MUNICIPAL WATER QUALITY IN CENDAK AREA*

* Worst case TDS data from South Dakota Public Water System Data, November 1983

Recreation

Increased base flows will expand the potential for boating and canoeing activities. Degraded water quality impacts to limited contact recreation may be somewhat offset by increased flows. respect to limited contact recreation due primarily to increased aquatic habitat availability.

Conclusions

The lack of detailed water quality information at this time makes it very difficult to conduct a specific, quantified assessment of CENDAK project water quality impacts. Until advanced studies are completed, it is not possible to quantify the extent to which water supplies will be affected or where deep percolation might result in the most significant impact to groundwater quality. Also, the better management of fertilizer application could lessen the potential for contamination of domestic water supplies. There has been no firm decision regarding whether surface return flows will be placed back into the delivery system or will be directed towards natural drainage channels. This assessment

is based on the assumption that such flows will be carried by natural drainage ways. If the surface flows are returned to the delivery system, surface water quality problems identified in this assessment should be less than now predicted.

To insure that any potential negative water quality impacts are properly addressed, the State recommends that certain mitigation measures should be included as part of CENDAK total project costs. We believe these mitigation measures are a prudent approach to resolving the possible problems identified in this assessment and adequately respond to the public concerns previously identified regarding this aspect of the project. After additional water quality studies are completed, mitigation measures may need to be revised accordingly. Such studies could show impacts that are either greater or less than what has currently been identified.

Essentially, we are concerned about four primary problem areas and have developed mitigation recommendations for the following:

1. TDS and nitrate contamination of groundwater supplies. We recommend that funds should be included to cover the cost of a rural water system for those rural and urban residents included in the project area residing over those portions of the aquifer land area where irrigation development will take place. We estimate that such a system will cost $20.57 million. Such a system will not have to be installed until deep percolation actually begins to mix with groundwater supplies.

   Violation of surface water quality standards for TDS is in the James River. We understand that the Bureau of Reclamation has already included a 23,000-acre foot ring dike near Fairfield at a cost of approximatly $25 million for dilution of project return flows to the James River. We understand that this measure will partially compensate for return flow impacts, but recommend that the feasibility of six smaller ring dikes located at the headwaters of the project receiving streems should be examined during the advenced study phase of the project. Such an analysis must include the adequacy of site locations for these ring dikes, potential degradation and sedimentation problems associated with this approach, the

water quality advantages, and costs. If the smaller ring dikes located on the tributaries are more effective from a biological standpoint but costs are greater than now estimated for the single ring dike, we would want such additional costs to be included in a revised total project cost estimate.

3. Flooding along the James River. If flooding problems on the James River occur south of Mitchell, some provision should be made for channel modification improvements. The state is currently engaged in an extensive James River improvement program and has estimated that if such work is necessary in the Mitchell to Yankton area, it would cost approximately $2.76 million to alleviate the flooding problems.
What are the real dollar costs per foot so far in the dredging program.

4. Suspended sediment impacting project area lakes and streams. In order to minimize the impacts occurring from the disturbance of land due to construction or increased cultivation, all lands in the project area should be managed according to a conservation management plan which includes Best Management Plans such as those listed on the State Conservation Docket and approved by the local conservation districts.

BASIS OF OPPOSITION TO CENDAK

Mr. CHAPPELLE. There are about 650 members of the Dacotah chapter. We thank you for the opportunity to present these views today.

The projects under consideration today demonstrate the extremes that exist in South Dakota between water development proposals that on the one hand meet pressing needs of large numbers of our citizens and on the other meet the desires of a few speculators and business interests.

The former is the WEB water pipeline that will deliver domestic water supplies to thousands of farms and ranches and scores of towns and cities. Having been born and raised in that part of South Dakota and having experienced family health problems that directly resulted from the poor quality of domestic water there, I assure you that WEB is needed and appreciated by the local people. There is no area in South Dakota where all communities are free of water quality or water quantity problems.

The other projects under consideration will provide direct benefits to far fewer people and pose severe environmental and public health problems.

We do not oppose funding for projects or studies that are geared toward addressing human needs and are environmentally sound.

The CENDAK irrigation proposal meets neither of these criteria. The farmers who have spoken to me, and doubtless to you as well, are con-

vinced that the last thing that they need is more acres of land producing more crops, thereby increasing the surplus that further depresses the price that they get for their crops.

The real sin of CENDAK is what the project would do to the waters and people of South Dakota. Attached to my testimony is a draft copy of the CENDAK Water Quality Assessment prepared by the South Dakota Department of Water and Natural Resources.

After I received the text of this report, I verified it with department personnel and was given the charts and tables to which the text refers. I have underlined the sections that are of most concern to our chapter.

If you glance through the report, you will note that there is not one page of text that does not have underlined passages. Read any one of those passages and I believe you will understand our concern.

CENDAK would degrade surface and ground water supplies in South Dakota, destroy wetland, woodland, and grassland habitats, and significantly impact the James River through an increase in total dissolved solids, increased flooding, construction and operation of water storage, and regulating facilities, and dredging and channelization.

CENDAK threatens to increase water treatment costs for communities, increase plumbing and water using appliance maintenance costs, carry biocides to ground and surface waters, increase sulfate concentrations, and increase nitrates and phosphates from fertilizers.

Each of the following sections of the document points to potentially serious consequences if CENDAK is pursued: General surface and ground water, domestic water supply, biota, flooding, aesthetics, industrial use, wetlands, streams and lakes, the Missouri River, and livestock feedlots.

No further moneys should be appropriated for CENDAK until the questions raised by this document are answered in full and a means of totally avoiding these impacts becomes a part of the CENDAK project plan. The money proposed for CENDAK would be better spent on an effort to deliver domestic water supplies to that part of South Dakota. The U.S. Army Corps of Engineers has studied that very approach.

Belle Fourche Project

My comments on the Belle Fourche refurbishing project are short. The old Belle Fourche project was one of the first Bureau of Reclamation projects undertaken. In its day it was used as a showcase. It has been unable to return its costs and had a major restructuring of its payback schedule at least once. In addition, project participants have been unable or unwilling to finance maintenance to keep the facility in good condition. Hence, this request for Federal funding.

We understand that the Belle Fourche refurbishing effort has been authorized under the Pick-Sloan Act. Where is the Fish and Wildlife Coordination Act report? Where is the environmental impact statement? These are required for new Pick Sloan projects and have not been done.

We are concerned that the Lake Andes-Wagner project will become the "Kesterson Marsh" of the Dakotas. We have naturally high concentrations of selenium in many of the soils of South Dakota. With return flows going to Lake Andes, we are concerned that a situation similar to the one at the Kesterson National Wildlife Refuge may result and threaten human health as well.

An additional concern is whether the objections of the Yankton Sioux Tribe have been met. Has the tribe now allowed canals to be run across their lands?

We feel that any development effort needs to be thought out to its logical conclusion. We need to plan past just getting water to the land for crops and to incorporate immediately sound and safe ways to handle the contaminated waste waters. We also feel that water needs should be accurately assessed and that we should work toward meeting those needs and not push projects just because a subsidy mechanism is available.

Thank you.

ADDITIONAL PREPARED STATEMENTS

Senator ABDNOR. I thank both of you gentlemen. Again, like all good hearings, we seem to run out of time. Senator Sasser has arrived. They have quite a delegation who, like you, want to be heard this morning, so I won't ask any questions at this time.

Before I conclude our part of the hearing, I want to ask unanimous consent that statements from the South Dakota Water Congress be placed in the record. Their statements will be made a part of the report at this point, along with any other statement related to South Dakota projects.

[The statements follow:]

Statement of South Dakota Water Congress

Mr. Chairman and members of this committee. We wish to express appreication for your willingness to take testimony on this important issue.

The South Dakota Water Congress is a broad-based citizens organization in South Dakota which supports and promotes the responsible use of water resources. We are the South Dakota affiliate of the National Water Resources Association.

We ask that you act favorably on funding for South Dakota water projects because our economy is based in agriculture. The relationship between per capita income, ag income and water supply can be directly correlated in South Dakota.

South Dakota is constantly riding a roller coaster of too much water at the wrong times and too little water when we really need it. As a result, our people aren't able to do any long range planning. The best farming plans can be laid, but without rainfall, we have no production. As a result, not only our farmers and ranchers suffer, but so do our ag dependent cities. We need the stability that irrigation and rural water systems can provide.

Studies have shown that those areas that have water development which can support smaller farms have more families not only in the rural sector, but in the urban sector as well. The stabilization of our farming and ranching population has a direct relationship to the stabilization of the small communities so vital to an agricultural state. This relationship is in direct alignment to the economic survival of the business community, to transportation, to schools and civic activities, to the advancement of new enterprise, and to the future of this state.

South Dakota gave up approximately 500,000 acres when the Missouri River dams were built under the Pick-Sloan Act. In return, the state was promised substantial irrigation development.

Funding these water projects is a step toward being justly compenstated for the loss South Dakota has accrued from the construction of the mainstem reservoirs that provide so much benefit to our sister states, the states receiving the electricity generated within our boundaries, the flood protection those reservoirs provide, and the dollars that have generated the taxes spent in other areas of the United States. We feel it's time South Dakota receive some of the promised irrigation.

We encourage full support by Congress and the Administration in the passage of funding for South Dakota water projects so that South Dakota may enjoy a progressive future through meaningful water development. It is the formulization of what needs to be done in South Dakota economically and begins to fulfill the promises of the Pick-Sloan Act.

STATEMENT OF HAROLD SEATON, PRESIDENT, UNITED FAMILY FARMERS, INC.

MY NAME IS HAROLD SEATON, PRESIDENT OF UNITED FAMILY FARMERS INC. I FARM SOUTHEAST OF ABERDEEN IN THE JAMES RIVER VALLEY. THE FAMILY HAS BEEN IN THE VALLEY FOR OVER 100 YEARS. MY WIFE AND I HAVE FOUR SONS, WHO ARE FARMING WITH US. WE ARE A CLOSE KNIT FAMILY AND DECIDED AS A FAMILY UNIT THAT I SHOULD COME AND TESTIFY ON SEVERAL CONCERNS THAT HAVE SURFACED SINCE THE COMMISSION'S REPORT WAS MADE PUBLIC.

FIRST WE FEEL THAT FARMERS IN THE JAMES RIVER VALLEY ARE MUCH MORE VULNERABLE TO EXCESSIVE RETURN FLOWS AND SEVERE SALTING IF THE COMMISSION PLAN PURSUANT TO ACREAGE ESTIMATED ON PAGE 33 OF THE COMMISSION'S FINAL REPORT IS PUT IN PLACE.

MY REASONS ARE THE FOLLOWING:

1. FULL RETURN FLOWS WOULD APPEAR IN AUGUST, SEPTEMBER, OCTOBER AND NOVEMBER.
2. THE TOPOGRAPHY OF BROWN AND SPINK COUNTIES, THE TWO NORTHERN COUNTIES, IS VERY FLAT AND DOES NOT LEND ITSELF TO RAPID DRAINAGE.
3. THE JAMES RIVER IS AN EXTREMELY NARROW PRAIRIE STREAM AND 250 CFS COULD BE A MAJOR FLOOD.
4. COUPLED WITH THE PIPESTEM AND JAMESTOWN RESERVOIRS' DRAWDOWNS, MUCH OF THE FLOODING IN SPRING, SUMMER AND FALL COULD BE CLASSIFIED AS MAN MADE.
5. SOME OF THE BEST WILDLIFE HABITAT IN SOUTH DAKOTA WOULD BE IN JEOPARDY.
6. LAST BUT CERTAINLY NOT LEAST IS WATER QUALITY THAT MAY NOT BE UP TO EPA STANDARDS FOR DRINKING WATER. WE CERTAINLY DON'T WANT ANOTHER "KESTERSON INCIDENT" IN SOUTH DAKOTA.

BECAUSE OF THESE REASONS WE IN THE JAMES RIVER VALLEY, REPRESENTING THE UNITED FAMILY FARMERS FEEL THAT IT IS MANDATORY THAT A COMPENSATION PLAN BE WRITTEN INTO THE LAW.

I AM SUGGESTING THAT FARMERS WHO FEEL THAT THEY HAVE A GRIEVANCE COULD TAKE THEIR PROBLEMS TO A JOINT BOARD MADE UP OF 3 MEMBERS FROM THE GARRISON CONSERVANCY BOARD AND 5 MEMBERS FROM THE JAMES RIVER WATER DISTRICT BOARD. THIS COULD BE FUNDED BY A PER ACRE SUR-CHARGE ON IRRIGATED ACRES DRAINED. THE MONEY COULD BE PUT IN ESCROW AND DRAW INTEREST. IT WOULD HAVE TO BE CO-SIGNED AND UNDERWRITTEN BY THE INTERIOR DEPARTMENT BECAUSE OF POSSIBLE INCIDENTS BEFORE THE FUND GREW. THIS PROCEDURE WOULD NOT PRECLUDE LEGAL ACTION RIGHTS AND IF THE DAMAGED FARMER FELT THAT HE WASN'T BEING TREATED FAIRLY HE COULD SUE. MY UNITED FAMILY FARMERS ORGANIZATION, 2000 STRONG, FEELS THAT THIS KIND OF PROTECTION IS IMPERATIVE AT THIS TIME.

OUR SECOND CONCERN IS THAT IN THE FORESEEABLE FUTURE IRRIGATION WILL BE COUNTERPRODUCTIVE. WHEN WE FIND THAT SUBSIDIES ARE UP TO 1,600,000 DOLLARS PER FARM OR $5000. PER ACRE, IT CAN'T HELP BUT BE A BUSINESS BOONDOGGLE AND IT IS SUPER RIDICULOUS TO SQUANDER MONEY IN THAT FASHION.

I HAVE NO QUARREL WITH MUNICIPAL, RURAL AND INDUSTRIAL WATER FOR THE CITIZENS OF NORTH DAKOTA. THEY CERTAINLY SHOULD HAVE THAT AS PAYMENT FOR THE PICKSLOAN

FLOOD CONTROL ACT OF 1944. I WOULD SUGGEST THAT A COMPLETE MORATORIUM ON CONSTRUCTION AT THIS TIME OR IN THE FUTURE BE ENACTED UNTIL IRRIGATED ACRES BE SPECIFICALLY DESIGNATED; UNTIL LONETREE RESERVOIR BE COMPLETELY DEAUTHORIZED; UNTIL WATER QUALITY MEET THE REQUREMENTS OF EPA; AND UNTIL RETURN FLOWS ARE WITHIN THE POTENTIAL DRAINAGE LIMITS OF THE JAMES RIVER.

STATEMENT OF WALLACE AND VELMA DEVRIES, BELVIDERE, S. DAK.

We are citizens of western South Dakota, lifelong members of the agricultural community, operators since 1947 of our own cattle ranch.

On February 26, our Governor and entire Legislature were in Washington, demanding an end to federal deficit spending because of its harmful effect upon agriculture.

The next day, back in South Dakota, that same Legislature passed a resolution urging Congress to fund the proposed CENDAK irrigation unit, estimated to cost $1.4 billion. Congressional bills HR 583 and S 253, supported by the resolution, embody a plan to provide water with sprinkler pressure to irrigate approximately 474,000 acres of land in eastern South Dakota.

Authors of the identical bills cite, in Section 2-B, "the rich bottom lands" which were lost to the four Missouri River dams constructed in South Dakota under the Pick-Sloan Missouri Basin Program; and in Section 2-D, the "great economic sacrifice" made by South Dakota for the P-SMBP projects.

South Dakota officials welcomed the Pick-Sloan dams, as they would welcome CENDAK, because of the urban business activity and state tax revenues generated by such federal spending.

The farmers and ranchers who lost rich bottom lands to those dams would not be compensated by CENDAK. In fact, additional land would be confiscated for this project, and landowners in the irrigation districts would be burdened with increased operating costs, property taxes and indebtedness.

We have observed that the much-publicized farm crisis has resulted largely from (1) federal deficit spending, resulting in high taxes and inflated costs, (2) excessive individual indebtedness, and (3) overproduction of certain commodities, encouraged by government subsidies.

The proposed CENDAK project would predictably intensify, not cure, these conditions.

William Janklow took office as Governor of South Dakota in January 1979.

BUDGET FOR THE OPERATION OF STATE GOVERNMENT

	FY 1979[2]	FY 1982[3]	Recommended[4] FY 1986
Total Budget[1]	$473,568,149	$713,101,389	$882,955,909
(Federal share of funding)	153,591,448	329,007,352	378,200,836

1 - does not include certain special appropriations, including state funding of elementary and secondary education

2 - July 1, 1978 - June 30, 1979

3 - July 1, 1981 - June 30, 1982

4 - July 1, 1985 - June 30, 1986

1755

STATE-OWNED RAILROAD

In 1981, Governor Janklow called a special session of the legislature to authorize the purchase of certain railroad property, including that of the Milwaukee Railroad that crossed the state from east to west. A statewide sales tax was levied to fund the purchase. Since that time, highway crews have been permitted to cover the Milwaukee railroad tracks with asphalt in the western, predominantly agricultural half of the state.

STATEMENT OF JAY DAVIS, EXECUTIVE DIRECTOR, UNITED FAMILY FARMERS, INC.

My name is Jay Davis, I am Executive Director of United Family Farmers from Aberdeen, South Dakota, and I am here to testify against the $41.3 million appropriation requested for North Dakota's Garrison Diversion Unit. On behalf of more than 2,000 South Dakota farm families who belong to U.F.F., most of whom live in the fertile and scenic James River valley, I must inform this committee that we cannot support the so-called compromise proposed by the Garrison Diversion Unit Commission.

The Commission's Garrison plan was intended to mollify Canadian objections. The governments of Canada and Manitoba opposed the Garrison unit, as authorized by Congress in 1965, fearing the impact that polluted return flows and new species of fish would have on their waterways and fishing industry. The Commission's plan would postpone the delivery of return flows to Canadian waters.

Unfortunately, the polluted return flows that Canada doesn't want would be redirected to South Dakota if the Commission's recommendations are approved. The irrigation upstream from us in the James River valley would be tripled - to 113,360 acres. This would cause severe flooding of prime South Dakota farmland in the fall. Our river bottom land would be salted up and destroyed. Our Sand Lake National Wildlife Refuge - which is a major staging area for migratory waterfowl in the Central Flyway - would be severely impacted or destroyed. Our drinking water could be contaminated.

We are apparently vulnerable to these depredations because we are United States citizens, and are not protected by any treaty. We respect the legitimate concerns of the Canadians who have opposed Garrison. But we cannot support a "compromise" that is being made at South Dakota's expense.

The Commission's Garrison proposal - like the authorized Garrison project - is economically unsound. The Bureau of Reclamation has suggested that the cost estimates submitted by the Commission are unrealistically low with regard to the M & I water delivery system, the Sykeston Canal, and the Glover Reservoir. Even if we accept the Commission's cost estimates, they would reduce the total cost of Garrison only from $1.3 billion to $1.1 billion. We do not believe that this is a significant contribution to the reduction of the deficit.

What sense does it make to further unbalance the federal budget by subsidizing irrigation - at a cost of $1,650,953 per farm (or $5,414 per acre) to produce more surplus crops? How will this help the American farmer?

Only 408 farms would receive irrigation under the Commission plan, yet 60.1% of the total capital costs advocated by the Commission would go to subsidize irrigation. These 408 farms, representing about one percent of the farms in North Dakota, could be purchased outright for perhaps one-tenth of the cost of providing irrigation water to them. A large proportion of these farms were signed up for the PIK program in an effort to alleviate the problem of surpluses.

The Commission's Final Report estimated a ratio of benefits to remaining costs of only .88. This is not an efficient use of federal dollars. The 30,000 to 40,000 acres of South Dakota farmland that would be damaged or destroyed by repeated fall flooding are not calculated into this ratio. If an independent commission is not appointed to settle claims over these losses administratively, a series of lawsuits by South Dakota landowners will be inevitable.

We would ask the Appropriations Committee to put the bulk of the proposed Garrison funding on hold. It remains to be proven whether the Commission package is a coherent or feasible alternative to the authorized project. This is a poor time to authorize continued construction of features that have made the Garrison the most controversial water project in America. None of the proposed new Garrison features have been authorized. None of the troublesome features of the old project-such as the Lonetree Reservoir - have been deauthorized. A moratorium on major construction activity until the dust settles is fair to South Dakota. It is a painless and very rational means of reducing the total public works budget.

We have no problem with the municipal and industrial water development proposed for North Dakota in the Commission's plan. We have strongly supported construction of the WEB Pipeline in our own area. The WEB Pipeline will meet the domestic water needs of 30,000 South Dakotans. It is a much cheaper and more beneficial project than the ill-considered and now defunct Oahe Irrigation Project, which would have been an environmental and economic disaster to our state.

The proposed Garrison features in the FY 1986 budget which we strongly oppose are the Oakes Test Area, the channelization of the upper James River, the New Rockford Canal, and the James River Feeder Canal. These features will cause permanent damage to our economy, our wildlife habitat, and our good river bottom land, and they will never yield a dollar's worth of benefits for each dollar spent.

CENDAK: $1.3 Billion for More Surplus Crops

BuRec's current estimate of the cost of the CENDAK Irrigation Project is more than $1.3 billion, or more than $2,700 per acre. Only 6/10 of one percent of the farmland in South Dakota would receive irrigation. To put this in perspective, every FHA farm loan in South Dakota could be paid off for $1.2 billion.

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Table 3

HABITATS INUNDATED BY
LAKE OAHE AND LAKE SHARPE 1/2/

Category and Type 2/	Lake Oahe (Acres)3/	Lake Sharpe (Acres)3/	Total (Acres)3/
CROPLAND			
Small grains, corn, and alfalfa	5,800	1,600	7,400
GRASSLANDS			
Pastured	98,200	24,800	123,000
Native hay	11,000	3,600	14,600
Total Grasslands	109,200	28,400	137,600
RIPARIAN			
Timber			
Cottonwood-ash	30,800	7,800	38,600
Cottonwood-willow	4,400	1,100	5,500
Brush			
Sandbar willow	14,400	3,600	18,000
Bottom Land	10,700	2,700	13,400
Marsh	2,400	600	3,000
Total Riparian	60,300	15,200	78,500
Total Wildlife Habitat	177,700	45,800	223,500
RIVER			
Water	38,400	9,700	48,100
Barren sandbar	5,900	1,500	7,400
Total River	44,300	11,200	55,500
TOTAL AREA	222,000	57,000	279,000

1/ Based on a composite of habitat types described in old USFWS Reports, and recent informal coordination with the USFWS.

2/ Based on maximum normal operating pools. For Oahe Reservoir this is 1617 msl. For Lake Sharpe this is 1420 msl.

3/ Acre figures are rounded off to the nearest hundred acres.

EXCERPT FROM GOV. WILLIAM JANKLOW'S SPEECH TO SOUTH DAKOTA WATER CONGRESS, MITCHELL, SOUTH DAKOTA 11-28-84 (U.F.F. has a tape of this speech)

"The CENDAK irrigation area, if I can put that up, that's the CENDAK area that I was talking about before...is 474,000 acres total, it's 300,000 in stage one, which holds the best odds and feasibility of moving forward. Stage two is more speculative, but it's been included in all of our planning and all of our work because of the tremendous amount of local interest and it's local people...It's a funny thing: Most of the people who complain about CENDAK today don't live in the CENDAK area. They're people who've become such professionals at complaining about things that might get done that they come over and bitch and interfere with their neighbors to tell them why they shouldn't build a project in their own yard. It's really kind of an amazing thing. It would take about eight years to build, the local people have put up about three hundred thousand dollars. They've actually gone out and assessed themselves an acreage fee of about three hundred thousand dollars that they've put up of their own money. We've put a million three of state funds into this project in the forms of...the law says they have to be secured loans, they're really unsecured loans and we know it, ah...to assist them in moving forward on their feasibility and the federal government has spent about three million dollars to date in trying to move this project forward..."

[From Forbes, Feb. 25, 1985]

OBSERVATIONS: DEFLATION IN THE FARM BELT

By Ashby Bladen

History usually makes a trial run before it drops the big bomb, and those willing to heed the warning can get out of the way. For example, in the fall of 1926 a couple of hurricanes blew down a real estate boom in Florida, three years before the bottom fell out of Wall Street and the stock and bond markets. Anyone who heeded that warning would have missed a lot of fun, but when 1932 came along, he would still have had some money.

This time the warning is coming from the farm belt, but let's start by taking a look at that Florida land boom. Like all runaway booms, it had a good concept, plentiful finance and an Achilles' heel. The concept was that everybody was going to vacation in Florida, and everybody would retire and buy a home there. During the peak of the frenzy, people bought and sold real estate binders for 10% down. The Achilles' heel was that Yankee speculators didn't believe the locals' tales about what the Florida wind could do. They had to find out for themselves.

The last time I wrote about the corn belt, 2½ years ago, I pointed out that the average farmer had little debt and was not in financial trouble, but that those who had borrowed at peak interest rates in order to pay peak prices for farmland were in trouble, deep trouble. The actual cash return from farming was only about 6% a year, so much of the anticipated return from owning a farm had to come from price appreciation, which is always a dangerous situation.

Now, not only the speculator-farmers are in trouble. A lot of sensible and prudent ones are, too. The main thing that has gone wrong during the last couple of years, on top of the speculative binge in farm prices, is, of course, the appreciation of the dollar in the foreign exchange market. U.S. farm produce has simply been priced out of the international markets. Indeed, it is getting to be cheaper to land some foreign-grown commodities in Chicago than to buy and ship them from southern Illinois. This is a ridiculous situation, and in my opinion, probably will not last very much longer. Certainly if it does last, we are going to have an awful lot of bankrupt farmers.

But just like the Florida land bust, the trouble in the farm belt is only the visible tip of the iceberg. What the American people are doggedly refusing to see is that for years and years we have been borrowing and spending our way out of little troubles, at the cost of making ourselves steadily more exposed to much worse trouble. That, of course, is essentially what the Keynesian revolution in economics was all about. But, of course, Keynes was originally prescribing a regimen of borrowing and spending as a cure for the Depression, not as a daily tonic.

In order to sell the Keynesian remedy to the people, economists had to persuade us that going into debt wasn't anywhere near as serious as we once thought it was. They have succeeded much too well. Few of the people in Washington seem at all concerned that the federal government has about reached the point where its debt becomes completely uncontrollable. From now on, just the compounding interest on the debt will keep it growing fast. The rest of the American people are borrowing and spending significantly more than the federal government is.

In other words, the odds now are that inflation will return. The mechanical cause of inflation is simply excessive borrowing and spending, which Americans are doing

with a vengeance. There are two reasons that we are, nevertheless, not having runaway inflation in this country like that of so many other countries. The first reason is that Americans have gone international with our borrowing and spending. We are now consuming a lot more bargain-priced imports than we are selling exports abroad, and borrowing from foreigners to pay for the difference.

The second reason is that the burden of debts has grown large enough throughout the world that financial trouble is creating deflation in some important markets. Specifically, some food producers, like Argentina and Brazil, are still inflating internally. But their debt problems have caused the external value of their currencies to slump and have made bargains of their food exports. That is what is putting the deflationary pressure on our farmers. Even so, the U.S. is likely to have another serious bout of inflation, both because the dollar will fall and because politicians will borrow and spend still more to bail out politically deserving debtors, like the farmers.

Recently, I have read some strange and wonderful ideas about how to "play" a falling dollar. One of the best and most sensible ways would be to buy some distressed farmland. The trouble in the farm belt most probably will get worse before it gets better. I would wait until it does get worse, or until the dollar starts down. This kind of credit deflation is a great producer of investment bargains. But not quite yet. ■

CENDAK Funding Resolution Okayed

PIERRE, S.D. (AP) — A resolution calling on Congress to fund the proposed CENDAK irrigation project in central South Dakota won approval Wednesday in the House.

The 41-24 vote followed debate in which opponents said asking Congress to spend money on CENDAK would undercut the Legislature's credibility in seeking federal spending cuts to reduce the nation's deficit, particularly coming just one day after lawmakers were in Washington.

Later, a House committee passed a bill that would create an irrigation district to build the proposed $1.4 billion project.

The House State Affairs Committee voted unanimously to send the Senate-approved measure to the full House. But the panel first amended it to change the way the area's landowners would vote to approve the district.

Opponents have criticized having landowners cast votes based on the amount of land they own. The committee altered the CENDAK bill to provide for a one-person, one-vote system. The panel also added a provision to ensure that the districts' landowners are notified before an election date to approve the system is set.

Take the Money Instead

To the Editor—For the last few years, we have been hearing about how the federal government owes South Dakota a huge irrigation project to compensate us for the loss of land when the Missouri dams were built. These dams provide flood control as well as electricity for neighboring and downstream states. Our compensation, the CENDAK project, has a price tag of about $1.5 billion. This amounts to over $3,000 per irrigated acre. The CENDAK project plan would ask the government for a $1.5 billion loan at no interest to construct the CENDAK project. This money would be paid back by the water users over the next 50 years.

If we South Dakotans think the government owes us this compensation, then let's demand it in cash. If the government loaned South Dakota $1.5 billion interest free, we could lend the money out at 10 percent interest and repay our loan in 10 years. At the end of this 10-year period, we would still have the $1.5 billion on which we could collect at least $150 million interest annually. This money could be used to build rural water systems, rebuild our roads, upgrade our educational system, help our farm economy, lower taxes and anything else we want to do with it.

I think this would be a much better compensation for building the dams than an irrigation project that might benefit one percent of the people and be a detriment to the other 99 percent. This money would benefit all South Dakotans, not just a few.

RON BARUTH
Alpena

Upper Midwest Region

SUBMITTED STATEMENTS FOR THE RECORD

Senator Abdnor. Before turning this over to Senator Sasser, Chairman Hatfield has instructed that those statements submitted on projects from the midwestern region of the country be placed in the record.

So, without objection, they will be incorporated in the record.

With that, we will take a short recess to let the South Dakota witnesses have a chance to leave. Senator Sasser and Congressman Gordon can have their witnesses come forward.

Thank you very much.

[A brief recess was taken.]

[The statements follow:]

GARRISON DIVERSION UNIT, NORTH DAKOTA

STATEMENT OF GOV. GEORGE A. SINNER OF NORTH DAKOTA

Chairman and members of the Committee:

Section 207 of Public Law 98-360 established the Garrison Diversion Unit Commission "to review the contemporary water development needs of the State of North Dakota and propose modifications to the Garrison Diversion Unit consistent with the existing authority". The Commission accomplished its assigned task on December 20, 1984. A copy of the Commission's conclusions and recommendations is attached to this statement.

Several of the Commission's conclusions and recommendations are significant. Among other things, the Commission's final report stated:

1. "The Commission affirms that there exists an obligation to the State of North Dakota for its contribution to the Pick-Sloan Missouri Basin Program which can be satisfied, in part, by Federal funding and implementation of the Commission Plan".

2. "The Commission recommends that the Secretary of the Interior proceed immediately to construct those portions of the Commission Plan that are a part of the 1965 authorized Initial Stage".

3. "The Commission recommends establishment of MR&I (municipal, rural, and industrial) systems for treatment and delivery of quality water to approximately 130 communities in North Dakota."

4. "The Commission recommends that the Garrison Diversion Unit be configured to provide irrigation service to 130,940 acres in the Missouri River and James River drainage of North Dakota."

5. "The Commission recommends that development of recreation features be completed concurrent with other project construction."

6. The Commission recommends concurrent implementation of a wildlife mitigation program during project development.

The Garrison Diversion Commission was established to develop a compromise plan that would be acceptable to the several adverse interests. Although the participants in the compromise process--especially the State of North Dakota and the Garrison Diversion Conservancy District--may not be totally satisifed with the Commission's Plan, it appears that this congressional goal has been substantially achieved.

The National Audubon Society, the most vocal opponent of the Garrison Diversion Unit, supports the Commission's recommendations. Nathaniel P. Reed, Chairman, Executive Committee, National Audubon Society Board of Directors, testified before the Subcommittee on Water and Power Resources on February 28, 1985, that: "The Commission Plan, it must be remembered, is a compromise and we support that compromise."

Mr. Reed also pledged, during the Commission's final hearing, to support the Commission's final plan. He said (at p. 277 of the transcript):

> Our pledge, made here today and made publicly, is to go before Chairman Bevill. . . and Senator Mark Hatfield . . .and actively support this proposal. Should additional authorizing legislation be required, we will actively work to enact such legislation.

Canada supports the Commission's recommendations. Diplomatic Note Number 201, dated March 26, 1985, states: "The Government of Canada considers that the Commission Plan as a package does not pose threats to Canadian waters and, once approved by Congress, should resolve a long standing problem on the Canada-United States agenda.

The North Dakota Legislative Assembly is presently considering Senate Concurrent Resolution 4010 concerning the Commission's recommendations. The resolution now "urges Congress to implement the Garrison Diversion Unit Commission final recom-

mendations except for the municipal and industrial water supply portion" and "urges Congress to adopt the North Dakota alternative for municipal and industrial water instead of the Garrison Commission's municipal plan."

I support legislation to authorize and direct the Secretary of the Interior to implement the Commission's recommendations. At the same time, I support an alternative to the Commission's recommendations concerning municipal and industrial water aspects of the Garrison Diversion Unit. Preliminary concepts about the M&I alternative have already been provided to the House Subcommittee on Water and Power Resources, Committee on Interior and Insular Affairs. A report being prepared by the North Dakota State Engineer contains additional details; it will soon be submitted to this committee.

It may be appropriate for this committee, to ensure compliance with the Commission's recommendations, to recommend that the appropriations bill contain the following clause: "None of the funds appropriated herein may be expended for construction activities inconsistent with the Garrison Diversion Unit Commission's report dated December 20, 1984." This clause will remove any doubt that Garrison Diversion Unit appropriations will be used for purposes inconsistent with the Garrison Diversion Unit Commission's recommendations.

It is a critical time for the Garrison Diversion Unit and continued appropriations are needed to complete essential features of the Unit. We must hasten to complete necessary environmental and other studies required to implement the Commission's recommendations. We must resume construction on the New Rockford Canal and other delivery components needed to operate the West Oakes Test Area and to provide water to South Dakota. We must continue planning for the delivery of M&I water to the Sheyenne River for eastern North Dakota. And, we must expeditiously

implement the recommendations of the Garrison Diversion Unit Commission.

Therefore, I urge your favorable consideration of funding for the Garrison Diversion Unit for FY1986.

CONCLUSIONS AND RECOMMENDATIONS

This section contains conclusions and recommendations of the Commission with regard to the contemporary water needs of the State of North Dakota as required pursuant to Section 207 (c)(3) of Public Law 98-360. Public Law 98-360 is found in Appendix A of this report. The details of the Commission Plan are found in Appendix D. A comparison of the Commission Plan to the 1965 Authorized Plan is in Appendix E, and a response to provisions of Public Law 98-360 is in Appendix F.

Federal Obligation to North Dakota. - Public Law 98-360, Section 207 (c)(2)(A)

The Commission affirms that there exists an obligation to the State of North Dakota for its contribution to the Pick-Sloan Missouri Basin Program which can be satisfied, in part, by Federal funding and implementation of the Commission Plan. The Commission recommends that its plan described in Appendix D, which is incorporated as a part of this recommendation, be implemented in place of the plans set out by the Bureau of Reclamation and described as the 250,000-Acre Initial Stage of the Garrison Diversion Unit, as authorized in 1965 or the original project authorization in 1944.

Commission recommendations do not preclude possible future development of other features supplemental to the Commission Plan. Lonetree Reservoir remains an authorized feature of the Commission Plan, but completion of its construction is deferred pending a determination of need by the Secretary of the Interior and satisfactory conclusion of consultations with Canada, after which appropriation of funds by Congress could be sought.

The provisions of Reclamation law are invoked in satisfying functions of the Commission Plan unless otherwise noted herein. The originally authorized 3-1/8 percent discount rate will be used for all project purposes including repayment by water users of municipal, rural, and industrial water systems. Costs of construction, operation, maintenance, and replacement of a treatment plant for releases to the Sheyenne River are recommended to be non-reimbursable.

Project Implementation. - Public Law 98-360, Section 207 (c)(2)(G)

The Commission recommends that the Secretary of the Interior proceed immediately to construct those portions of the Commission Plan that are a part of the 1965 authorized Initial Stage. These portions of the plan are described further in recommendations regarding National Environmental Policy Act compliance and the section in Appendix D on Project Implementation.

The Commission also recommends that the Secretary propose enabling legislation to Congress by February 15, 1985, or as soon as practicable, to assure authority to implement any part of the Commission Plan which is determined to be beyond current authorization. If, by the sine die

adjournment of the 99th Congress, legislation authorizing the Secretary to implement the Commission Plan has not been enacted into law, the Commission recommends that the Initial Stage Garrison Diversion Unit be carried forward and all recommendations of the Commission be dismissed except features of the Commission Plan which were previously authorized by Congress.

The Commission also recommends that the Secretary of the Interior proceed immediately with advance planning actions leading to preconstruction reports, NEPA compliance, final designs, and prompt implementation of the remaining features of the Commission Plan, in close coordination with the State of North Dakota.

Wildlife Habitat Impacts and Mitigation Procedures. - Public Law 98-360, Section 207 (c)(2)(J)

The Commission recommends that mitigation for project implementation losses be accomplished on an acre-for-acre basis, based on ecological equivalency and guided by a mitigation process clearly defined in the Commission Plan. Implementation of the project mitigation strategy will be the responsibility of the implementing bureau or agency, in consultation with the Federal Advisory Council to be established as described below.

Mitigation for impacts to National Wildlife Refuge System and the North Dakota Game and Fish Department lands acquired, in part, with Federal monies would be implemented in accordance with the Fish and Wildlife Coordination Act, National Wildlife Refuge System Administrative Act of 1966 (16 U.S.C. 688dd), and Federal Aid to Wildlife Act (16 U.S.C. 699i), their respective regulations (50 CFR 29 and 80), and other appropriate legislative mandates.

The Commission recommends the establishment of a Federal Advisory Council to provide continuing oversight, coordination, and management of wildlife programs associated with the Commission Plan. The 10-member council will be composed of (a) three residents of the State of North Dakota and three residents of other states, all having extensive professional experience in waterfowl and wetlands management; (b) the Commissioner of the North Dakota Department of Agriculture, (c) the Commissioner of the North Dakota Game and Fish Department; (d) the Regional Director of the Bureau of Reclamation; and (e) the Regional Director of the USFWS (U.S. Fish and Wildlife Service). The Regional Director of USFWS will serve as chairman and the Designated Federal Representative. The Advisory Council will review the wildlife program and annually make recommendations for any needed revisions for consideration by the Secretary of the Interior, the Governor of North Dakota, and the managing agencies. On a case-by-case basis, the Council will make recommendations as to whether the Secretary of the Interior's eminent domain authority should be used for implementation of the wildlife program.

Municipal, Rural, and Industrial Water Delivery Systems. - Public Law 98-360, Section 207 (c)(2)(D)

The Commission recommends establishment of MR&I (municipal, rural, and industrial) systems for treatment and delivery of quality water to approximately 130 communities in North Dakota. Pick-Sloan Missouri Basin Program preference power, which has been previously reserved for irrigation pumping purposes, is recommended to be made available for operation of these systems.

A municipal and industrial water treatment plant with a capacity of 100 cubic feet per second is recommended to provide filtration and disinfection of water releases to the Sheyenne River for use in the Fargo and Grand Forks areas in accordance with the results of Canadian

consultation. It is recommended that the costs of construction, operation, maintenance, and replacement of this feature be considered non-reimbursable as the investment is being made solely for the purpose of maintaining good relations between the United States and Canada.

The configuration and character of the municipal, rural, and industrial water systems and the location and character of facilities to treat water supplies shall be determined through a planning process of the bureau or agency that will implement these recommendations. Whether by pipeline, open channel conveyance or some other approach, and whether from Missouri River water, ground water, or a combination, an important consideration of system design shall be cost effectiveness. The Commission's initial determination of an approximate configuration of the systems is described in Appendix D (see pg. 33). In implementing the municipal, rural, and industrial water systems, it is recommended that the Secretary consider strategies similar to those used for the WEB Pipeline Project in South Dakota where local entities assume project leadership with appropriate oversight by the Secretary or his designee.

The configuration of the systems shall be based on the ability and willingness of water users to assume financial responsibility. Appropriate investigations shall be made to assure early implementation at minimum cost. It is recommended that capital cost repayment assistance be provided, if necessary, to lower the additional monthly family cost to $10 or to the operation and maintenance costs of the system, whichever is greater. The repayment assistance shall be provided without interest by reassigning a portion of the irrigation repayment assistance from the Initial Stage of the Garrison Diversion Unit. The Commission believes that the additional $10 per month family cost represents a reasonable estimate of municipal, rural, and industrial water users ability to pay in 1984 dollars. However, the Commission recommends that the Secretary review that estimate every 5 years and provide provisions in contracts to make appropriate adjustments.

For those municipal and industrial systems that will deliver Missouri River water to communities in the Hudson Bay drainage, it is recommended that the United States consult with the Government of Canada on plans and methodologies before implementation.

The State of North Dakota has specifically requested that the Southwest Pipeline Project not be included in the Commission Plan, and therefore, that project is excluded from the Commission's recommendations.

Irrigation Deliveries. - Public Law 98-360, Section 207 (c)(2)(B,F,G)

The Commission recommends that the Garrison Diversion Unit be configured to provide irrigation service to 130,940 acres in the Missouri River and James River drainages of North Dakota as described in Appendix D (see pg. 32). The Commission acknowledges that, due to the nature of its recommendations, some discretion must be left to the Secretary in implementing the Commission Plan. However, the Commission expects that there will be no modification of its recommendations on configuration of principal supply works, deferral of irrigation in the Hudson Bay drainage, and the total area to be irrigated.

The Lincoln Valley area is located in the upper Sheyenne River Valley. It is recommended that drainage modifications be provided to treat return flows, or to collect and pump return flows to the principal supply works or another suitable Missouri Basin disposal point. Alternatively, it is recommended that an equivalant acreage in the West Oakes Extension area be substituted should no cost-effective measures to manage Lincoln Valley return flows be identified.

Principal Proposed Reservoirs. - Public Law 98-360, Section 207 (c)(2)(G)

The Commission recommends that Lonetree Dam not be completed at this time and that the Sykeston Canal be constructed as a functional replacement. While the Lonetree Dam and Reservoir facility remains an authorized feature of the Commission Plan, it is recommended that construction be deferred pending a determination by the Secretary of the Interior consisting of a demonstration of need and satisfactory conclusion of consultations with Canada, after which appropriation of funds by Congress could be sought.

The Commission recommends that land acquisition be completed at the Lonetree Reservoir site, with the area to be retained in United States ownership and managed for wildlife purposes by the State in accordance with the Fish and Wildlife Coordination Act, 16 U.S.C. 661, et seq., and credited as mitigation for habitat losses incurred elsewhere. The Commission recommends that Sheyenne Lake National Wildlife Refuge be replaced pursuant to the National Wildlife Refuge System Administration Act. The Bureau of Reclamation shall enter into an appropriate management arrangement with the State relative to the lands of the Lonetree Reservoir site.

The Commission recommends that Kraft Slough be recognized as a unique area with wildlife resource values that transcend all other potential uses. No project features of any kind, other than those needed for wildlife management purposes, should be situated there.

It is recommended that the Secretary initiate efforts to purchase Kraft Slough in its entirety, to be managed in perpetuity for its wildlife values by the appropriate Federal or State agency. These wildlife values shall be credited as mitigation for habitat losses incurred elsewhere.

The Commission recommends that the first phase (17,000 acre-feet) of the Glover Reservoir be included as a feature of the plan in lieu of Taayer Reservoir for reregulation of flows along the lower James River. The Commission recommends that the Bureau of Reclamation enter into a memorandum of agreement with the State of North Dakota for State construction of the first phase of Glover Reservoir using Garrison Diversion Unit appropriations.

Recreation. - Public Law 98-360, Section 207 (c)(2)(F)

The Commission recommends that development of recreation features be completed concurrent with other project construction. Recommended recreation features include 3 State Parks developments, 11 county and city recreation areas, and 3 trails, as included in the Commission Plan (Appendix D) and referenced in the State of North Dakota Plan for Development of the Garrison Diversion Unit, September 1984, with appropriate adjustment to reflect the deferral of Lonetree Reservoir.

Water Quality. - Public Law 98-360, Section 207 (c)(2)(D)

The Commission recommends that Best Management Practices be included as a requirement in contracts executed for repayment and water service, and that these practices be monitored in compliance with State law on all irrigated areas that might contribute to return flows.

Further, the Commission recommends that streamflow and quality in the James River be monitored, and that such volumes of water from project features be provided as are needed to maintain the salinity concentrations of water at the South Dakota border at a level no higher than the pre-project historical monthly average. Such releases will be made by the operating agency in consultation with the State.

The Commission recommends that the current Lake Audubon and McClusky Canal water freshening program be reevaluated, including an examination of alternative approaches to reduce salinity levels prior to start of project operation. In particular, the feasibility of reverse draining Lake Audubon into Lake Sakakawea and pumping back McClusky Canal waters into Painted Woods Creek shall be evaluated. It is recommended that the Secretary direct the Bureau of Reclamation to develop a program to freshen the Lake Audubon/McClusky Canal system to the extent that is economically and technically feasible.

International Concerns and Continuing Consultations with Canada (1909 Boundary Waters Treaty). - Public Law 98-360, Section 207 (c)(2)(K)

The Commission recommends that the terms and conditions of the Boundary Waters Treaty be honored. The concerns of the Provincial and National Governments of Manitoba and Canada are appreciated and must be recognized. Missouri River waters conveyed into the Hudson Bay drainage as part of the Commission Plan shall be treated in a manner determined acceptable pursuant to United States-Canadian consultations. It is recommended that costs of features or modifications to features of the Commission Plan attributable to meeting requirements of the Boundary Waters Treaty of 1909 be considered non-reimbursable.

The Commission recommends a one-time baseline survey of species and pathogens in waters of the Hudson Bay drainage. This survey should be the responsibility of an independent international organization not affiliated with Governments of the United States or Canada. The scientific team should include qualified technical specialists from the State of North Dakota, the Province of Manitoba, the United States, and Canada, and should be funded as part of the Commission Plan.

The Commission recommends that a mechanism be developed and initiated at the earliest practicable time for appropriate parties to negotiate the issue of irrigation water deliveries to Hudson Bay drainage areas of North Dakota. It is the consensus of this Commission that U.S. residents of the Souris and Red River drainages should not be constrained in perpetuity from pursuing the possible benefits of irrigation development with Missouri River water. When Treaty conditions can be satisfied, such developments may be pursued. So important is the issue, and so necessary is the development and preservation of a favorable climate for discussion, that the Commission recommends the Secretary of the Interior encourage the parties to meet at specified 6-month intervals for this purpose until a mutually satisfactory means is found to accommodate irrigation deliveries of Missouri River water to the affected area(s).

In addition, the Commission recommends that the Secretary of the Interior initiate discussions with the Department of State to pursue negotiation of modifications to the 1909 Boundary Waters Treaty to more precisely define the word "pollute" for Treaty purposes and make other changes of a mutually appropriate nature.

Bi-National Resource Development Program. - Public Law 98-360, Section 207 (c)(2)(K)

The Commission recommends that the Secretary of the Interior define a program whereby appropriate authorities of the United States and Canada, in consultation with representatives of the Province of Manitoba and the State of North Dakota, begin during 1985 to explore establishment of a Bi-National Resource Development Program.

Indian Resources. - Public Law 98-360, Section 207 (c)(2)(H)

The Commission recommends that 15,200 acres of Indian lands of the Lucky Mound and Upper Six Mile Creek irrigation areas of the Fort Berthold Reservation be developed to provide an agricultural economic base. To

minimize risk associated with irrigating the deep glacial till soils located on the Fort Berthold Indian Reservation, the Commission recommends delaying implementation of the second area until the first is determined by the implementing agency to be sucessful.

The Commission recommends that, should the Standing Rock Sioux Tribe request, irrigation assistance should also be provided for the 2,380-acre Fort Yates irrigation area on the Standing Rock Reservation. The Commission recommends that irrigation of lands on the Fort Totten Reservation with Missouri River water not be undertaken until potential problems with biota transfer into Canadian waters are resolved. Municipal water supply needs of the Fort Berthold, Standing Rock, and Fort Totten Reservations shall be satisfied. It is recommended that facilities for Indian reservations which are a part of the Commission Plan be implemented with Bureau of Reclamation appropriations, using pumping power from the Pick-Sloan Missouri Basin Program, with repayment made pursuant to the Leavitt Act.

The Commission recommends that the Secretary intercede with the Army Corps of Engineers to seek access rights for the Tribes to develop recreation opportunities along the shorelines of Lakes Sakakawea and Oahe.

The Commission recommends that the Secretary promptly encourage initiation of Congressional oversight hearings on Indian water rights in the Missouri River Basin.

The Commission recommends that the Secretary provide assurances to the Three Affiliated Tribes of Fort Berthold (the Mandan, Hidatsa, and Arikara) and the Standing Rock Sioux that all previous legally binding commitments and/or treaties of the United States made in conjunction with lands taken and the values thereof for the creation of Lakes Oahe and Sakakawea will be fulfilled.

The Commission recommends that no later than January 31, 1985, the Secretary appoint a five-member commission of which no fewer than two members are representatives of Indian Tribes. The Commission will report to the Secretary no later than October 1, 1985, regarding the following items on the Fort Berthold and Standing Rock Reservations:

- Full potential for irrigation,
- Financial assistance for on-farm development costs,
- Replacement of infrastructures lost by the creation of Garrison Dam and Lake Sakakawea and Oahe Dam and Lake Oahe,
- Preferential rights to Pick-Sloan Missouri Basin power,
- Development of shoreline recreation potential,
- Return of excess lands,
- Additional financial compensation,
- Protection of reserved water rights,
- Other items the five-member Commission may deem appropriate,
- Funding of all items above from the Garrison Diversion Unit funds, if authorized.

The Commission recommends that the desires of the Devils Lake Sioux for the freshening of Devils Lake be given due regard, as set forth in its recommendation concerning Devils Lake Management.

Abandoned Features. - Public Law 98-360 Section 207 (c)(2)(C,G)

The Commission recommends that any investment related to full design capacities of features that are not employed in the Commission Plan shall be absorbed as a reasonable cost of satisfying the Federal obligation to the State of North Dakota and therefore will be non-reimbursable.

If the full capacities of those project features are used in some future expansion of the project, those non-reimbursable costs should be reassigned to purposes for which the features are used.

The Commission recommends that the existing Lonetree Dam foundation and other works at that site be preserved intact to assure their possible use at some future time.

Ground-water Resources. - Public Law 98-360, Section 207 (c)(2)(E)

The Commission recommends that the viable concepts of satellite well fields and the West Oakes aquifer recharge concept be investigated, commencing in 1985. When compared to other features of the Commission Plan, the most cost-effective systems should be implemented. The Commission recommends that the progress of these investigations be reported at least twice annually to the Secretary of the Interior and the Governor of North Dakota until such time as these concepts are implemented or otherwise abandoned.

Devils Lake Management. - Public Law 98-360, Section 207 (c)(2)(J,K)

The Commission recommends that construction of an outlet from the Devils Lake system to the Sheyenne River and future funding for an inlet to the Devils Lake system be considered. Initiation of either feature shall be based on the outcome of current Corps of Engineers studies, NEPA compliance, permitting reviews, and satisfactory completion of consultations with Canada.

James River Conveyance System. - Public Law 98-360, Section 207 (c)(2)(G)

The Commission recommends that the James River channel be employed as the conveyance facility to supply irrigation water to the LaMoure and Oakes irrigation areas.

The Commission further recommends that those channel changes and mitigation measures be implemented which are determined necessary to use the James River as the principal southern conveyance system. Bypass canals and other structural and/or management measures to reduce return flow impacts to Arrowwood and Sand Lake Refuges shall be investigated, and appropriate measures implemented to lessen refuge impacts.

Equity Among Counties. - Public Law 98-360, Section 207 (c)(2)(H)

The Commission recommends that the Secretary urge the State to determine an appropriate reallocation of funding responsibilities among its citizens through a special committee of appropriate composition. Twenty-five of North Dakota's 53 counties comprise the Garrison Diversion Conservancy District, and residents there have been assessed ad valorem taxes annually since 1956 to advance the project. The levy has been mimimal and was intended to reflect, in part, the general benefit from the project that would accrue to the citizens of the counties. The beneficiaries of the Commission Plan are different from those of the 1965 Initial Stage, and modification to the Conservancy District may be in order. The State of North Dakota should review the organizational structure of its political subunits that exist in North Dakota for implementating the Garrison Diversion Unit in order to make equitable adjustments consistent with implementation of the Commission Plan.

Environmental Impacts and Compliance Procedures. - Public Law 98-360, Section 207 (c)(2)(J)

The Commission recommends that National Environmental Policy Act compliance completed for project features common to the authorized project and to the Commission Plan be considered adequate, assuming

no supplementation is required and implementation of those common features proceed immediately. The project features in this category include:

Snake Creek Pumping Plant
McClusky Canal
New Rockford Canal
James River Feeder Canal
Jamestown Dam and Reservoir
New Rockford Irrigation Area
Robinson Coulee/James River Diversion
LaMoure Irrigation Area
West Oakes Irrigation Area
West Oakes Pumping Plant and Canal

It is recommended that wildlife mitigation for the above features continue to be implemented during further project NEPA compliance.

It is recommended that programmatic NEPA compliance for the Commission Plan be concluded within 18 months of Congressional action confirming the Secretary's authority to implement any part of the Commission Plan which is determined to be beyond current authorization. Separate NEPA compliance documents may be prepared for Indian features or municipal, rural, and industrial water delivery systems which do not use the Garrison Diversion Unit principal supply works.

For features of the Commission Plan not previously considered under NEPA, or features which have changed significantly since previous NEPA compliance, site specific NEPA compliance should be completed prior to initiating construction of those features.

The Commission recommends that the Secretary establish an Environmental Impact Task Force with the Bureau of Reclamation as lead agency and the State of North Dakota, Bureau of Indian Affairs, Fish and Wildlife Service, Environmental Protection Agency, Indian Tribes, and other appropriate entities as cooperating agencies.

STATEMENT OF RUSSELL L. DUSHINSKE, CHAIRMAN, BOARD OF DIRECTORS, GARRISON DIVERSION CONSERVANCY DISTRICT

Mr. Chairman, and members of the subcommittee, I am Russell L. Dushinske of Devils Lake, North Dakota. As Chairman of the Board of Directors of the Garrison Diversion Conservancy District, I am the authorized spokesman on this important matter of appropriations with which to continue construction of the Garrison Diversion project during the fiscal year 1986. Mr. Chairman, the Board of Directors is pleased to support the President's budget of $41,300,000 for the fiscal year of 1986.

The Garrison Diversion Unit continues to have solid support from our congressional delegation, the Governor, the North Dakota legislation, and hundreds of organizations and citizens throughout the state.

I am sure all of you realize that the Garrison Diversion Unit Commission evaluated the project this past year. The commission recommendations contained many areas that were common in the 1965 plan. The funds from fiscal 1985 were used on these common features. The recommended funds for fiscal 1986 would again be used to construct common features. The legislation to authorize the implementation of the commission plan is now pending in the House of Representatives. Our Board has reviewed the commission plan and agrees that the legislation should be enacted. We have some differences with some of the recommendations but feel these will be worked out over the construction period.

The 1985 fiscal appropriation allowed significant development to occur for the project. What we need now is for the President's budget to be enacted into law so we can continue to move full speed ahead in the construction none of which will have any impact upon the Canadian drainage system.

Mr. Chairman, there continues to be many positive signs on the horizon for the Garrison Diversion Unit. The mitigation and enhancement plan is moving ahead. It is a pleasure to tell you that over 100,000 acres of land have been offered for sale by willing sellers for mitigation and enhancement purposes.

We are also continuing our discussions with our South Dakota counterparts to assure South Dakotans that we will cooperate and work together to

deliver water through the Garrison Diversion Unit to lands in the James River Basin. This is a feasible means for augmenting the water resources of eastern South Dakota from the Missouri River.

Also, Mr. Chairman, the State of North Dakota and the Conservancy District continue to work closely with the Department of Interior in the consultations process on concerns of Canada. I am pleased that through these deliberations technicians from both Canada and the United States have reviewed and evaluated technical and scientific data addressing many questions arising in the negotiation process. The Conservancy District policy has always been one of inviting Canadian technicians to take part in any research done in behalf of the project. The appropriation for fiscal 1986 will allow the continued construction of the main supply works and the distribution and drainage system for the 5,000-acre test area in the Oakes section of the Garrison Diversion Unit. This very important test area will provide scientific data which will answer many of the concerns which have been posed by the Canadians.

Mr. Chairman, this appropriation also means jobs for North Dakota. Money spent on the construction features of the project is very effective in providing employment opportunities for the North Dakota labor force. The appropriation will have significant impact on the work force of our construction industry.

As Chairman of the Garrison Diversion Conservancy District, I want to take this opportunity to thank the committee for the support given to our project in the past. We cherish this support and trust we will continue to have it in fiscal year 1986 and the years to come. The State of North Dakota and the Conservancy District have worked very hard in their efforts to bring to North Dakota the Garrison Diversion Unit. This is an integral part of the yet to be completed Pick-Sloan Missouri Basin Project. This is a long-standing commitment to provide our people with a comprehensive water management program. This will give them a sustained supply of excellent quality water. We will continue to direct our efforts to this end.

Thank you.

NEBRASKA WATER RESOURCE DEVELOPMENT PROJECTS

North Loup Unit, Nebraska

Joint Statement of the Twin Loups Reclamation District and the Twin Loups Irrigation District

Mr. Chairman and Members of the Committee:

We wish to take this opportunity to express our deep appreciation for your support of the North Loup Division in the past, and we now urge your continued support as the construction of the North Loup Project nears the half-way mark.

As the North Loup Project moves closer towards completion, support for our Project continues to increase. We who make up the Board of Directors of the Twin Loups Irrigation District have not been accepting any additional acreage into the Irrigation District for the past two years, and particularly since the authorized 53,000 acreage has been reached. Although this is widely known and highly publicized, Mr. Shaughnessy, who has been our legal counsel for over 32 years, continually receives inquiries about somehow joining the Irrigation District. Interestingly, many of these are people originally in the Irrigation District but chose to leave the District after our Project was authorized in 1972 and before construction began in 1980. Now that many of these people having now seen the reality of our Project, desire to participate and have their lands receive service from the North Loup Project.

The County Road Relocations around Calamus Dam and Reservoir were completed and opened to traffic this past Fall. This Road is a fine all-weather asphalt surface Highway which is already been enjoyed by the many people traveling on it. Tourist traffic observing the dam construction from the observation overlook is almost continual during the summer months.

Public hunting on the federally owned land in the Reservoir Site has intensifed this past Fall. The 100-acre pool of water formed by diverting the Calamus River flow through the Dam's Outlet Works provided ideal conditions for the fall migration of ducks and geese.

The area in and surrounding our Project is entirely supported by an agricultural economy. Farmers and Ranchers and the Agribusiness and Services who support our farms and ranches are, and will always be, the economic lifeblood of our Area.

Our agricultural economy has been so severely stressed over the past several years many say that the depressed agricultural economic situation equals the "Great Depression of the 1930's". No, we do not have "Soup Lines" in our Towns and Villages, but we do have "Food Pantries" in those rural communities where banks have failed and farmers do not have enough credit to buy food. Our Project Area is also experiencing farm bankruptcies, forced farm sales, credit squeezes reducing this Spring plantings, and the associated agribusiness stresses. However, due to the Project Construction Activities, our Area as a whole has fared much better than other areas in Central Nebraska. The continued construction of the North Loup Project has helped moderate the acute decline experienced in the agricultural economy of the Area to be served by the North Loup Project. We are fortunate to have started construction of the North Loup Project at the precise time when the agricultural economy began declining and we again acknowledge this Committee's support for the North Loup Division and are most grateful to each and every member of your Committee.

We are also confident that these agricultural ecomonic stresses will pass, as they always have, and that we will be in a position to participate in the upswing of the cycle over the next few years as the North Loup Project nears completion.

As we reported to you this past year, the Nebraska Game and Parks Commission is designing and constructing the recreation facilities around the Calamus Dam and Reservoir under Public Law 89-72 Cost-Sharing Agreement whereby the State of Nebraska is funding $540,000.00 and the Federal Government is funding $540,000.00. Last Fall the boat ramps around the Dam and Reservoir

were completed. This year the Recreation Roads and Public Use Faciltilies are scheduled for construction. Completion of the Recreation Facilities is expected in 1986.

Recently, the Bureau of Reclamation awarded a 13.6 million dollar contract to C. R. Fedrick, Incorporated of Novato, California, for the construction of the Geranium System, the second service area in our Project. This contract calls for the construction of the Geranium Pumping Plant, another Smaller Pumping Station. 20 miles of Open Canal and Laterals, and 24 miles of Buried Pipe Distribution System. The completion and initial water delivery for this System are scheduled for the Spring of 1987.

The construction of the Calamus Dam and Reservoir, the Mirdan Canal and the Mirdan Pipe Distribution System are rapidly progressing towards completion. Initial filling of the Calamus Dam and Reservoir is expected to begin this Fall and with the completion of the Mirdan System Facilities, we are expectantly looking forward to the initial delivery of water in the North Loup Project in the Spring of 1986.

Although construction of the Operation Headquarters Building and Maintenance Yard have been delayed, we have been assured that these Facilities will be ready for use before the Initial Irrigation Service in 1986. We understand a contract award for the construction of these Facilities is scheduled for August, 1985.

On March 22, 1985, as Officers of the Twin Loups Reclamation District, we held an initial negotiating meeting with the Bureau of Reclamation on a Proposed Drainage and Minor Construction Contract. The Contract between the Bureau and our Reclamation District will accomplish minor construction activities associated with the North Loup Division, including but not limited to installation of drainage facilities, the correction of deficiencies and omissions from the original construction, monitor during initial filling and priming and puddling activities, the reseeding of construction areas, and any fencing or fence removal on the Project Area.

In the near future our District Boards will be negotiating a second contract with the Bureau of Reclamation to undertake the operation and maintenance of the water supply system and the distribution system during the interim period after construction is complete and before the time when the O & M responsibility is formally transferred to the Reclamation District and the Irrigation District under the terms of our respective Repayment Contracts.

These two interim contracts will be mutually beneficial to both the Bureau of Reclamtion and the Reclamation District and the Irrigation District. The Bureau of Reclamation will not have to employ people to specifically operate and maintain the Project for just a few years before transferring to the Reclamation District and Irrigation District, and the Districts can gain operation and maintenance experience for our Project while the designers and construction people are readily available for consultation. We believe this course will also be more economical to proceed thereby holding down project costs as much as possible.

As you can observe we who make up the Board of Directors of the Reclamation District and Irrigation District are vigoriously pursing our responsibilities in the ultimate operation and maintenance of the North Loup Project. We are anxiously awaiting its full completion.

Calamus Dam and Reservoir, the first major feature of the North Loup Project, will be completed this Summer. We have set August 31st, 1985, as the date for a Formal Dedication of the Calamus Dam and Reservoir and the North Loup Project. Our Joint Boards are happy to take this opportunity to invite each and every member of this Committee to attend our Dedication Ceremonies on August 31st, 1985. We will build a stage as large as we need to properly honor all the people who have been instrumental in helping us realize our longstanding dreams that the North Loup Project be a complete reality.

The construction of the North Loup Division is currently estimated to be 45 per cent complete overall. The Fiscal Year 1985 Program is $36,353,000 while Fiscal Year 1986 Budget request presently before your Committee is $21,749,000.00. We request your favorable consideration for the continued funding of our North Loup Project and again we thank you for your long standing support of our Project.

Statement of Jack Odgaard, President, Nebraska Water Resources Association

This statement is submitted in support of the appropriations for the O'Neill Unit reclamation project on behalf of the more than 8,000 farmers, agri-businesses, and other Nebraskans represented by the Nebraska Water Resources Association.

Last year the Nebraska Water Resources Association observed its 40th anniversary in working for water conservation and management in Nebraska and our region. The beginning of our association coincides with the establishment by the Congress in 1944 of the Pick-Sloan Missouri Basin Program. The establishment of that program was one of the principal reasons for formation of the Nebraska Water Resources Association, and was the primary effort of the association in its first year of being.

The Senate may be pleased to know of the latest figures on the benefits that have accrued from the Pick-Sloan Program in those first 40 years. Through last year, the mainstem Missouri River dams and others in the program had provided more than $7.8 billion in flood control benefits, principally to the cities and counties along the lower reaches of the Missouri and Mississippi Rivers.

The total installed hydroelectric generation capacity just on the six mainstem reservoirs and the two major reservors in Missouri is 2,253,200 kilowatts; and the sale of energy throughout the region results in annual revenues to the federal treasury of some $100 million. The purchases of power by utilities in Nebraska alone amount to nearly $25 million annually. Barge navigation below Sioux City is in the neighborhood of three million tons annually.

The two major areas of benefits from the Pick-Sloan Program that receive little attention and for which only minimum economic benefits were included are outdoor recreation and fish and wildlife. The dams and reservoirs in the Pick-Sloan system provide more than 36 million visitor-use days annually for outdoor recreation.

In addition to all types of water-based recreation, camping, and other outdoor activities, these reservoirs have created new sport fisheries and have had hundreds of thousands of additional acres of land put in the public domain for outdoor recreation and wildlife habitat.

The lakes and reservoirs themselves have added millions of surface acres of water that in addition to providing outdoor recreation and fishery resources, have provided habitat for migratory waterfowl. This is of particular significance and benefit to wildlife in view of the declining areas of marshes and wet meadows that have been lamented by the U.S. Fish and Wildlife Service.

One more point should be made about the recreation opportunities afforded by our multiple purpose water projects in the Pick-Sloan Program. That is the concern expressed in recent years by the Congress, federal administration, and private sector, about the overcrowding of our national parks and the growing need for outdoor recreation opportunities for Americans in the future.

The Nebraska Game and Parks Commission, in its State Comprehensive Outdoor Recreation Plan (SCORP) financed by the federal government under the Land and Water Conservation Fund, predicts that by the year 1995--just 10 years from now--the State of Nebraska will have a deficiency of more than 90,000 surface acres of water just to meet the public needs for fishing. The continuation of the Pick-Sloan Program, with multiple purpose projects such as the O'Neill Unit with its Norden Dam and Reservoir, provides a substantial opportunity for the Congress and the federal government to meet these growing public and environmental needs for the future.

Besides the new fisheries and wildlife habitat the Norden Reservoir would include, it would provide more than 22,000 acres of land and water which would represent a significant contribution on the part of Nebraska toward meeting the nations growing needs for outdoor recreation opportunities.

The last major area of benefits for which the Pick-Sloan Program was established is irrigation. And, that is the area that has had the least development and follow through from the original plans and authorization for a basin-wide comprehensive water development, conservation, and management program.

The Pick-Sloan plan originally provided for irrigation development for 5.3 million acres of farmland in the basin. But, to date there have been only 489,800 acres of irrigation lands developed, including both full and supplemental water lands. The irrigation portion of Pick-Sloan has had only 28 units of more than 100 completed.

And, that brings us to the O'Neill Unit, for which this statement is submitted. As already indicated, the Nebraska Water Resources Association

strongly supports the concept and past federal policies of multiple purpose water projects and programs. We have long supported the O'Neill Unit as such a multiple purpose water project that would provide numerous benefits for Nebraska, our region, and the nation.

But, we are aware of the difficulty the O'Neill project has faced in recent years because of the loss of a united effort on its behalf by the Nebraska congressional delegation, and because of the undue delays and millions of dollars spent in expenses where the project has been held up in federal district court.

During this time--more than eight years now--organizations that historically oppose water resources development and management have been able to mount extensive efforts in Washington and in the Congress to turn the Congress against the O'Neill project with the Norden Dam and Reservoir. That is in spite of the fact that the project has continued to have the support of every administration since before its reauthorization in 1972.

We in Nebraska--far removed from the Washington scene and dependent on a struggling agricultural economy--could not begin to match the resources and efforts of those groups that oppose our water projects with their millions of dollars in corporate contributions and well-staffed Washington area offices. Those groups have been taken to task editorially in some of the news media in Nebraska in recent times over their tactics and dissemination of false information, and their integrity and honesty have been challenged. But, unfortunately, that has been too little too late, and it doesn't reach to Washington and the members of Congress from other states.

On March 21st, the Nebraska Water Resources Association testified before the Water and Power subcommittee of the House Committee on Interior and Insular Affairs to support an alternative to the Norden Dam and Reservoir in the O'Neill project. That alternative had been agreed upon by Nebraska's congressional delegation.

In that hearing we noted that the support for the alternative by the Nebraska Water Resources Association was given reluctantly because of our ongoing belief and efforts for multiple purpose water projects to address as many water problems, needs, and potentials as possible.

The issue before us now is one of ensuring the survival of hundreds of

family farms and the agricultural economy of a large rural area of north-central Nebraska. There is a severe need for water for irrigation in that area, and we thus support and endorse the irrigation water provisions proposed as an alternative for the O'Neill Unit.

Members of the Senate are familiar with the plight of farmers and the agricultural sector today across the country. Nebraska is one of the states hardest hit by the current agricultural problems, and the area of north-central Nebraska that would be served by the O'Neill project is one of the most sorely distressed areas in the nation. In the past year the area has experienced three bank failures, the closure of two Production Credit Associations, and foreclosures on farms and ranches.

So, the Nebraska Water Resources Association supports the alternative to the O'Neill Unit, and continued appropriations so that the alternative can be undertaken as soon as possible. We understand that Mrs. Smith has asked the House committee to reprogram those funds that have accummulated for construction of the O'Neill Unit, and we urge the Senate committee to approve such funds and future appropriations to expedite the completion of the O'Neill Unit.

Letter From Gov. Robert Kerrey of Nebraska

March 29, 1985

The Honorable Mark O. Hatfield
Chairman
Subcommittee on Energy
and Water Development
Senate Committee On Appropriations
SD-142 Senate Office Building
Washington, D.C. 20510

Dear Senator Hatfield:

This letter is written to express to you and your Committee my continued support of the Bureau of Reclamation's Fiscal Year 1986 Funding Request of $21,749,000 for the continued construction of the North Loup Division. The North Loup Project will provide irrigation service to 53,000 irrigable acres and will provide increased recreation and fish and wildlife enhancement opportunities.

Last year, as Governor of the State of Nebraska, I signed legislation providing State Funding of 50 percent of the cost of the Recreation Development Facilities around the Calamus Dam and Reservoir, the primary water storage facility for the North Loup Project. An additional cost sharing agreement with the Nebraska Game and Parks Commission provides for the operation and maintenance of the Recreation Facilities by the Commission.

The basic economy of the State of Nebraska is Agriculture and Agribusiness. This economy has been extremely stressed over the last two years. It is absolutely critical that our Nation make the necessary investment to enhance our agricultural production ability.

I join with many others who believe we are at the threshold of a dramatic change in the role of agriculture, particularly in Nebraska and the Midwest. I am convinced the proper development and conversation of Nebraska's abundant water resources is an important foundation of agriculture's dramatic change.

The North Loup Division is now nearly one-half complete. I thank you and your Committee for the continuing favorable actions on appropriation requests and request your support for the $21,749,000 Fiscal Year 1986 appropriation for the continued construction of the North Loup Division.

Sincerely,

Robert Kerrey
Governor

O'NEILL UNIT, NEBRASKA

STATEMENT OF ALFRED T. DRAYTON, PRESIDENT, NORTH CENTRAL NEBRASKA RECLAMATION DISTRICT AND THE NIOBRARA BASIN IRRIGATION DISTRICT

Thank you, Mr. Chairman, and members of this important [illegible] Appropriations Subcommittee on Energy and Water Development for the opportunity to submit written testimony for appropriations for fiscal-year 1986.

I am Alfred T. Drayton of O'Neill, Nebraska, president of the North Central Nebraska Reclamation District and of the Niobrara Basin Irrigation District. I am joined in bringing this testimony to the Subcommittee by my good friend and long-time associate, Mr. Clair Evans of Springview, Nebraska, vice president of the reclamation district.

We represent the boards of directors and the memberships of these organizations that are the local project sponsors of the O'Neill Unit of the Pick-Sloan Missouri Basin Development Program.

We are glad to be supported in our requests by Jack Odgaard, president of the Nebraska Water Resources Association, and by Mr. Bill Kerrey, brother and official representative of Governor Bob Kerrey.

We thank the Subcommittee for its many, many years of support for the construction of the authorized O'Neill Unit, which includes the Norden Dam and Reservoir as its main features. Now we are asking for your understanding, patience, and, then, your continued support for modifying the project in a major way.

We are writing today to report formally to you that the official position of Nebraska has changed with respect to the

O'Neill Unit. By force of circumstances, we have to accept the fact that the Nebraska congressional delegation as presently comprised will never support construction of the Norden Dam as one of the main features or the O'Neill Unit.

Speaking for the project leaders, I tell you that we would still rather have the dam and the unit as originally authorized. Faced with a real threat of deauthorization of the entire project, the directors reluctantly at a joint meeting on March 11, 1985, recommended as follows:

*That the appropriate committees of the Congress approve use of funds already appropriated in the O'Neill Unit's construction account, about $470,000 as of January 31, to immediately initiate planning, research, and development of an artificial groundwater recharge concept suggested by a study of alternatives by the State of Nebraska dated January 31, 1985. This study was approved by the Congress, which provided $100,000 in matching funds in the regular supplemental appropriations act for fiscal-year 1983.

*That the $240,000 requested for the O'Neill Unit in the President's budget for fiscal-year 1986 also be earmarked by the Congress for use in developing the new concept.

*That the Congress be asked to approve amendment of PL 92-514, the legislation authorizing the O'Neill Unit, so as to eliminate the Norden Dam and Reservoir and in their place to authorize planning, research, development, and construction of an artifical groundwater recharge system suggested by the recommendation of the State of Nebraska in its report entitled, "Study of State-led Alternatives," dated January 31, 1985.

*That the language of the section authorizing indexing costs

for inflation be corrected so as to restore material dropped out of the original law apparently through a clerical error.

*That the project area to be served be enlarged to 92,000 acres from 77,000 acres.

*That the authorized ceiling cost be changed to reflect the costs of planning and construction of the alternative, as may be determined by engineers. The State of Nebraska estimates the cost at $200 million, but the Bureau says it may be closer to $272 million. The point is that the state-led study indicates the alternative would cost much less and would provide water to more land than the presently authorized project.

*That the guidelines formerly applied by the Bureau of Reclamation to the project when reauthorized in 1972 be applied also to this amended project inasmuch as the O'Neill Unit is technically under construction. The Norden Dam undoubtedly would have been completed long ago were it not for a federal court order in effect since 1976 that prohibits construction until a law suit challenging the project's safety and environmental impact is disposed of. The Bureau presently is asking the plaintiffs to dismiss the suit in exchange for eliminating the Norden Dam as part of the project.

*That reports on feasibility of the amended project be submitted to the appropriate committees of the Congress before any construction may begin.

*That a Niobrara River Task Force be established by the Secretary of the Interior to be comprised of federal, state, local, and public-interest groups to reconcile procedural questions during the planning and development stages.

I am well aware that this Subcommittee has been fully

informed of the events leading up to our change of positions. Testimony about the progress of the state's study of alternatives was presented by Nebraska state officials one year ago in annual hearings by this Subcommittee. That testimony, on pages 2032-2067, Part 4, on appropriations for fiscal-year 1985, included illustrations and photographs relating to the concepts being examined.

Congresswoman Smith has kept us informed also about the discussion in the House Appropriations Subcommittee on Energy and Water Development hearing on March 7 this year with Interior Secretary Hodel. As you may know, Secetary Hodel said he would consider the change favorably. Subsequent to that, the Bureau announced it would stop all activity with respect to the Norden Dam and would seek dismissal of the lawsuit in Federal District Court in Nebraska.

Most of the changes we are requesting in the authorizing law are incorporated in authorizing legislation introduced in the House and Senate. The House version, HR 1590, was the subject of hearings on March 21 before the House Interior Subcommittee on Water and Power Resources. No hearings have been held on the Senate version, S 671.

Although nothing is set, Chairman George Miller of the House authorizing Subcommittee told us he is very pleased with the new Nebraska consensus, excited about the new alternative, and ready to mark up the bill soon.

We support Congresswoman Smith's request that the bill, if reported out of full House Interior Committee, be put on a fast-track toward passage by being put on the Suspension Calendar. We hope that the Senate also will see fit to expedite this legislation.

We are submitting testimony similar to this to the House Appropriations Subcommittee on Energy and Water Development.

It is our understanding that Congresswoman Smith, as dean of the Nebraska congressional delegation, already has informed by letter all authorizing and appropriating committees of the Congress about the change in the Nebraska position with respect to the O'Neill Unit.

We ask the Subcommittee's continued support for our efforts to bring water to north-central Nebraska. We ask that a favorable report on our requests be forwarded to the full Senate Appropriations Committee. We are working hard to build support also in the House.

We would be happy to take questions you may have. If we do not have the information, we will be glad to try to provide it for the record.

Letter From D.C. Evans, Vice President, North Central Nebraska Reclamation District

Mark O. Hatfield, Chairman
Subcommittee on Energy and Water Development
United States Senate
Washington, D. C.

Dear Mr. Chairman:

As you are no doubt aware, we appeared before the House Subcommittee on Water and Power Resources on March 21, 1985. This hearing was held in an effort to arrive at a consensus of opinion as to how the O'Neill Project could be saved.

It has been made quite evident to us, due to environmental opposition and rising construction costs, due in part to a temporary injunction that has been in force for about nine years, that the Norden Dam as a part of the O'Neill Project would not be built.

A State led study of Alternatives to the Norden Dam was completed in January of this year. Since this study did show possibilities for an underground recharge system, we did request that our original authorization be amended to delete the Norden Dam and that some version of the State led Proposal be substituted. This request was made in the interest of obtaining a definite and documented need for water for this area of Nebraska.

We started more than thirty years ago to get an irrigation project for this area. We were promised the same about thirteen years ago when the O'Neill Unit was authorized by Congress in 1972.

We now come before your committee to respectfully request your support for the appropriation of those funds contained in the 1986 budget for the O'Neill Unit. These funds are needed to fully complete a study of the proposed alternative at the earliest possible time to assure that more undue delay is not brought to bear upon this Project.

Sincerely,

D. C. Evans

D. C. Evans
Vice President
North Central Nebraska Reclamation District

PRAIRIE BEND UNIT, NEBRASKA

STATEMENT OF CENTRAL PLATTE NATURAL RESOURCES DISTRICT

REQUEST: $325,000.00 for Fiscal 1986

FUNDING PURPOSE: Continuation of Feasibility Study by U.S. Bureau of Reclamation

PROJECT: Prairie Bend Unit

LOCATION: Dawson, Buffalo and Hall Counties in Nebraska

PROJECT PURPOSE: Irrigation, stabilization of ground water levels, enhancement of water quality, small community and rural domestic water supplies, fish and wildlife habitat, flood control, public outdoor recreation and other purposes determined to be appropriate.

We realize how busy the Subcommittee on Energy and Water Development is especially during the time you are holding hearings with respect to funding water projects throughout the United States and so rather than request time to present testimony in person at the hearings, we will instead utilize this letter to express our continued support of the feasibility study currently being developed by the U. S. Bureau of Reclamation on the Prairie Bend Unit in Dawson, Buffalo and Hall Counties in Nebraska.

Senator James Exon, Senator Edward Zorinsky, Congresswoman Virginia Smith and our Natural Resources District along with many other organizations, groups, associations and individuals have worked for a number of years toward getting a water resources project implemented in the area that would resolve the declining ground water level, water quality, flooding, and fish and wildlife problems that we have here in the Central Platte Valley of Nebraska. The project that is needed and envisioned by the sponsors, which are our Natural Resources District, the Central Nebraska Conservation Association and the Twin Valley Conservation Association, is not a single purpose irrigation project but a comprehensive multi-purpose water resources project.

We have good reason to believe that one project could:

(1) supply supplemental irrigation water
(2) stabilize the declining ground water levels
(3) enhance ground water quality
(4) protect and enhance the quality of the municipal, small communities and rural domestic water supplies
(5) provide fish and wildlife habitat
(6) provide flood control and reduce flood damage, and
(7) provide public outdoor recreation for the residents of south-central Nebraska.

In addition, we feel the project can be designed so that it recognizes and addresses the need for maintaining flows in the Platte River at the critical times for such instream and downstream uses as:

(1) ground water recharge for irrigation and rural domestic supplies,
(2) induced recharge for municipal water supplies,
(3) migratory waterfowl including several threatened and endangered species,
(4) maintenance of sub-irrigated crops,
(5) maintenance of wet meadows and wetlands,
(6) water quality enhancement in surface and ground water, and
(7) fish and wildlife.

We have already made a considerable amount of up-front progress toward making the project a reality. Numerous studies, programs and data gathering efforts have been conducted that are an aid in the preparation of the feasibility study that is currently being conducted by the U. S. Bureau of Reclamation.
All of the data from the previous plans, studies, programs, research and activities lead us to several conclusions:

(1) The water resources project is feasible from both an engineering and an economic viewpoint;

(2) There is sufficient unused flows in the Platte River that passes right through our Natural Resources District to provide the supplemental water needed;

(3) There is sufficient water available to recharge the ground water aquifer and stabilize the now declining ground water levels;

(4) That ground water recharge can also enhance ground water quality and protect the municipal, small community and rural domestic water supplies;

(5) There are good reservoir sites for the necessary storage available on Prairie Creek and on Wood River and its tributaries;

(6) Soils within the project area are highly suitable for irrigation with most of the land falling in the Soil Conservation Service's classification of "prime" agricultural land;

(7) Benefits from the project would more than cover the costs of building and operating the project;

(8) Large monetary, environmental and aesthetic benefits would occur from the development of fishing, wildlife and recreational aspects of the water and land use;

(9) Major flood control benefits could occur at little or no additional cost;

(10) Analyzing the project from an irrigation standpoint alone should have a favorable benefit:cost ratio of approximately 1.6 to 1;

(11) The Bureau of Reclamation indicated from their appraisal level studies that a feasibility study of the project appears to be justified, both on the basis of need and on the basis of probable economic feasibility.

The work done thus far by the Bureau of Reclamation in the feasibility study has not changed those conclusions and lead us to believe that even though we have major problems there is a feasible solution. Feasible from an engineering, economic and an environmental standpoint.

Our Natural Resources District Board, numerous other organizations from the area and people from our region are in support of and committed to this project. We are actively participating, along with representatives of numerous other local, state and federal agencies, civic organizations, farm groups and others, in a "Public Values Group" that has been established to work with the U. S. Bureau of Reclamation for the purpose of identifying and addressing all of the issues and concerns within the area that could be addressed by the project. The attendance and interest at the numerous Public Values Group meetings has remained very high.

We are confident that a multi-purpose water resources project will prove to be feasible and, when developed, will make a major contribution to the stability of Central Nebraska's economy and to the people of the region and their well being, as well as enhance the fish and wildlife resources.

To make such a program a reality we need your continued help and we need the continued help of the U. S. Bureau of Reclamation.

We would hope that you would all lend your strong individual and committee support to the Federal appropriation of at least $325,000.00 for fiscal 1986 so that the Bureau of Reclamation can continue the feasibility study that we so earnestly need.

STATEMENT OF RODNEY K. GANGWISH, SHELTON, NEBR.

I would like to take this opportunity to submit written testimony in support of continuing the feasibility study for the Prairie Bend Unit by the Bureau of Reclamation.

I am a landowner and live two and a quarter miles south, and two and a quarter miles west of Shelton, Nebraska, within the boundaries of the proposed Prairie Bend Unit and am actively engaged in a farming partnership with my brother and my father.

I wish to convey to you a growing concern on the part of myself and my neighbors about the future of irrigated agriculture in our area.

We have ground water declines of 15 to 25 feet in the area with a significant decrease in well production. In most areas of the northern part of the Prairie Bend Unit, the top water Pleistocene formation has been depleted. Some of these shallow wells in the northern reaches of the area that were yielding 700 to 800 gallons per minute 10 years ago and now yield less than 150 gallons per minute. These shallow wells have been replaced with deep wells drilled into the Ogallala aquifer. The problem is that in some areas the Ogallala formation either does not exist or is not that productive and is yielding only 400 gallons per minute.

The land we farm that lies close to the Platte River (within two to four miles) also has no deep water Ogallala aquifer. The wells on this land have decreased up to 25 percent in output over the last 15 to 20 years.

This trend is alarming to me, and when we take into account the projections of ground water models and studies, such as the Platte River Basin Level B Study conducted by the Missouri River Basin Commission, our future for sustained irrigated agriculture is in serious jeopardy.

In addition, there are water quality problems. All of the residents and towns in the area get their drinking water from ground water. Several communities have problems because their nitrate content is above the Public Health Service's recommended maximum. I had to replace my well four years ago because it was yielding water with this same problem.

Flooding is another problem and, although not frequent, can cause a great deal of damage. There was in excess of $30,000,000.00 damage in the 1967 flood between Kearney and Columbus, much of which was in the proposed project area.

I feel the mood of the people in our rural area and in the surrounding communities of Grand Island and Kearney, have changed to the point that they are ready to face up to these challenges. We envision a project that would not only supplement irrigated water supply, stabilize ground water levels and enhance ground water quality, but would enhance municipal and rural domestic water supplies and provide fish and wildlife habitat, public outdoor recreation and flood control. One or more of these facets of the project would appeal to every citizen of our area in addition to stabilizing the economy of irrigated agriculture.

These are some of the reasons for the strong base of support the project has throughout the valley.

As you can see, we are not talking about a single purpose irrigation project, but a multi-purpose water resources project that would address all of these needs and more.

My neighbors and I support this type of project which will meet our needs for our future in irrigated agriculture. If we do not have some solutions to our challenges, we will be faced with turning irrigated acres back to dry land.

We in the Prairie Bend Unit urge you to support the continuation of the feasibility study.

STATEMENT OF DOUG THOMPSON, WOOD RIVER, NEBR.

I sincerely ask the Committee to seriously consider the request for the approval of funds for continuation of the feasibility study of the Prairie Bend Project in Central Nebraska.

This project is essential to the irrigated economy of the Hall/Buffalo County area. The area included in the project has been experiencing significant ground water declines over the past twenty years and the projections of declines for the coming years are disastrous.

As a farmer who has lived and farmed in the western Hall County area my entire life (as did my father and grandfather), I have seen our wells that at one time would pump 1,000 gallons per minutes from 60 feet deep, decline to 500 gallons per minute at 200 feet deep. The replacement cost of these "deep" wells into the Ogallala aquifer is staggering (approximately $15,000.00 per well), not to mention the increased energy requirements which are approximately triple.

The Prairie Bend Project would not only surface irrigate a considerable portion of the area, but would provide us the much needed recharge of the underground aquifer for continued pump irrigation.

The area to be served by this project is not marginal land which would be developed for irrigation should the project be built; it is for practical purposes, all Class I prime farmland which has already been developed and irrigated over the last 40 years. This entire area of Nebraska operates on an irrigated economy, not only the farmers, but all businesses which are interrelated to them. Considering the condition of the present farm economy, should the area be reverted to a dry land economy, the consequences would be disastrous.

Local support for the project is tremendous. The Central Nebraska Conservation Association (Prairie Bend) is operated strictly on donations from area farmers and businessmen, and has worked in conjunction with the Central Platte Natural Resources District on the project. In addition to the $240,000.00 committed to the project by Central Platte Natural Resources District, many in-kind services have been and will continue to be rendered by both groups.

The futures of my family and neighbors will hinge upon this project; and therefore, I hope you will give it your most serious consideration.

STATEMENT OF RONALD G. HARGENS, CAIRO, NEBR.

I farm between Cairo and Wood River in the approximate center of the Prairie Bend area. I am 38 years old and have always lived in this area and have farmed for 21 years for myself.

In that time period I have seen the shallow wells go dry, being replaced by deep wells, tripling the horsepower requirements for irrigation water. On the land I farm there have been six irrigation wells abandoned for lack of production. Replacement wells were drilled at a greater depth to sustain irrigation. According to the Bureau of Reclamation studies, and other studies done by private engineering firms, it is shown that in parts of the Prairie Bend area the aquifer life to sustain irrigation is 25 years or less.

In the same period the nitrate level of our house well has increased to 13 parts per million, three parts per million above the drinking water quality standard. Since we discovered this high level of nitrate in our drinking water we have been hauling bottled water for drinking.

To solve some of our problems, the Central Nebraska Conservation Association (Prairie Bend) was formed by a group of farmers and landowners from the Cairo, Wood River and Shelton area in western Hall and eastern Buffalo Counties in Nebraska. The purpose of the organization is to develop an irrigation and ground water recharge project to combat declining water tables and well production in much of the area.

To do this we filed a water right application in March of 1976 with the State of Nebraska to divert, store and use Platte River water. In October, 1976 we went to the Central Platte Natural Resources District, a local government subdivision, to ask them to assist us in securing a feasibility study. The Board of Directors unanimously decided to help us because of the existing and future water problems. Together we began seeking assistance from the Bureau of Reclamation to have them do an appraisal and feasibility study of the area.

The Upper Platte River Study has been completed by the federal government and the Prairie Bend area was part of the study. The study shows that there is a feasible project in the area.

Our Nebraska delegation secured authorization and funding approval in both the House and the Senate for the feasibility study in 1983 and the study is now underway. The Central Platte Natural Resources District has budgeted $240,000.00 to help fund the feasibility study and additional financial support is being offered from the Central Nebraska Conservation Association.

The project is being supported by several area groups and organizations: the Hall County Board of Supervisors, Buffalo County Board of Supervisors, Kearney Chamber of Commerce, Grand Island Chamber of Commerce, City of Grand Island, the towns of Cairo, Shelton and Wood River, Central Platte Natural Resources District, the Nebraska Natural Resources Commission, Nebraska Water Resources Association and several other groups and organizations.

An attitude survey poll was conducted by the Central Platte Natural Resources District, Central Nebraska Conservation Association, Whooping Crane Habitat Maintenance Trust and the Grand Island Chamber of Commerce. The poll was taken in the Central Platte River Valley and showed the people were very much in favor of a water storage project in the area. Of those who had an opinion, 85 percent were in favor.

With this amount of State and local support, and the existing and future water problems of water quality and supply, we feel it is of utmost importance that the feasibility study be continued in order to determine what can be done to solve the problems.

Therefore, I am submitting this testimony to request your continued support of the Prairie Bend feasibility study being conducted by the Bureau of Reclamation. The study has been going very well, so I decided to submit this written testimony instead of taking up valuable committee time with oral testimony on an unopposed study.

RESOLUTION OF SANTA BARBARA, CALIF.

RESOLUTION NO. 85-040

A RESOLUTION OF THE COUNCIL OF THE CITY OF SANTA BARBARA, CALIFORNIA, REQUESTING THE CONGRESS OF THE UNITED STATES TO APPROPRIATE SUFFICIENT FUNDS TO THE BUDGET OF THE UNITED STATES ARMY CORPS OF ENGINEERS TO PROTECT AND MAINTAIN THE HARBOR, BEACHES AND STREAMS OF THE CITY AND COUNTY OF SANTA BARBARA.

WHEREAS, the Harbor of the City of Santa Barbara provides permanent berthing for over 1,000 recreational and commercial boats, serves as the home port for a Coast Guard cutter, and is the harbor of refuge for a large number of visiting vessels annually; and

WHEREAS, the Harbor entrance has been subject to sand shoaling since its inception and must be dredged annually to maintain a navigable entrance channel; and

WHEREAS, the Harbor periodically suffers severe damages as the results of storms, and

WHEREAS, the City of Santa Barbara has petitioned the U. S. Army Corps of Engineers to reactivate its Harbor Improvement Study; and

WHEREAS, the City of Santa Barbara, in recognition of the need for comprehensive area-wide planning for protection and management of beaches, has joined the County and other local governing bodies in aggressive participation in the South Coast Regional Beach Erosion Control Group; and

WHEREAS, the City of Santa Barbara supports the U. S. Army Corps of Engineers Coast of California Storm and Tidal Wave Study and more specifically the U. S. Army Corps of Engineers Santa Barbara County Beach Erosion Study; and

WHEREAS, the City of Santa Barbara has periodically suffered damages to public and private property as a result of flooding of Mission Creek and supports the U. S. Army Corps of Engineers Santa Barbara County Streams/ Mission Creek Flood Control Study and participates in its Citizens' Advisory Committee for that study;

NOW, THEREFORE, BE IT RESOLVED that the Council of the City of Santa Barbara does hereby urgently request that the Congress of the United States appropriate sufficient funds to the budget of the United States Army Corps of Engineers to permit that agency to carry out the following projects:

1. Ongoing financial participation in the dredging of the Santa Barbara Harbor;
2. The Harbor Improvement Study;
3. The Coast of California Storm and Tidal Wave Study and the Santa Barbara County Beach Erosion Study;
4. Santa Barbara County Streams/Mission Creek Flood Control Study.

Adopted March 19, 1985

PLATTE RIVER STREAM BANK EROSION CONTROL

STATEMENT OF DALE L. WAHLGREN, PRESIDENT, PLATTE RIVER FLOOD CONTROL ASSOCIATION, INC.

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE, I AM DALE L. WAHLGREN, PRESIDENT OF THE PLATTE RIVER FLOOD CONTROL ASSOCIATION. THE ASSOCIATION WAS FORMED TO OBTAIN A SOLUTION TO THE HABITUAL FLOODING THAT HAS OCCURRED ON THE PLATTE RIVERS IN NEBRASKA.

I AM A FARMER RANCHER LIVING ON THE PLATTE RIVER JUST BELOW THE DIVERSION DAM EAST OF NORTH PLATTE, NEBRASKA. MY TESTIMONY REFLECTS NOT ONLY THE VIEWS OF THE PLATTE RIVER FLOOD CONTROL ASSOCIATION, BUT MY OWN PERSONAL VIEWS FROM THE PERSPECTIVE OF A FARMER WHO CONTINUALLY DEALS WITH THE PROBLEMS OF THE PLATTE RIVER.

IN 1983, KENT MILLER, GENERAL MANAGER OF THE TWIN PLATTE NATURAL RESOURCES DISTRICT, AND MYSELF GAVE TESTIMONY BEFORE THIS COMMITTEE ON THE PROBLEMS OF FLOODING ON THE PLATTE RIVER BASIN AND SUBSEQUENTLY ASKED FOR THE APPROPRIATION OF $500,000 TO BE ALLOCATED TO SECTION 55 OF PUBLIC LAW 93-251 AUTHORITY FOR U. S. ARMY CORPS OF ENGINEERS TECHNICAL ASSISTANCE TO DEVELOP BANK STABILIZATION MEASURES FOR A 46 MILE SITE ON THE PLATTE RIVER. DUE TO THE HARD WORK OF OUR NEBRASKA CONGRESSIONAL DELEGATION AND THE WISE DECISIONS OF THIS COMMITTEE, THE APPROPRIATION WAS MADE AND THE PROJECT WAS FUNDED AND IS BEING CARRIED OUT. I PERSONALLY AND ON BEHALF OF THE PLATTE RIVER FLOOD CONTROL ASSOCIATION WOULD LIKE TO THANK THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT FOR THEIR COOPERATION IN FUNDING THIS PROJECT.

LEGISLATION HAS BEEN INTRODUCED TO PROVIDE FOR CONSTRUCTION OF DEMONSTRATION PROJECTS IN THE FORM OF THE

"NEBRASKA STREAMBANK EROSION PREVENTION AND CONTROL DEMONSTRATION ACT OF 1985". MYSELF AND THE PLATTE RIVER FLOOD CONTROL ASSOCIATION WOULD LIKE TO GO ON RECORD IN SUPPORT OF THIS LEGISLATION WHICH WOULD REVIVE SECTION 32 OF THE WATER RESOURCES ACT OF 1974 AND IS BEING HEARD BY THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS.

AGAIN, I WOULD LIKE TO THANK THE COMMITTEE FOR THEIR PROMPT ACTION AND SUPPORT, AND FOR GIVING ME THE OPPORTUNITY TO TESTIFY BEFORE THIS COMMITTEE.

STATEMENT OF KENT O. MILLER, P.E., GENERAL MANAGER AND DISTRICT ENGINEER, TWIN PLATTE NATURAL RESOURCES DISTRICT

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE, I AM KENT O. MILLER, GENERAL MANAGER AND DISTRICT ENGINEER FOR THE TWIN PLATTE NATURAL RESOURCES DISTRICT.

NEBRASKA'S 24 NATURAL RESOURCES DISTRICTS ARE LOCAL POLITICAL SUBDIVISIONS OF THE STATE OF NEBRASKA CREATED TO CONSERVE, PROTECT, DEVELOP AND MANAGE THE NATURAL RESOURCES OF THE STATE. DISTRICTS, WHICH WERE ESTABLISHED IN 1972, CONSOLIDATED THE FUNCTIONS PREVIOUSLY PERFORMED BY SOIL AND WATER CONSERVATION DISTRICTS AND WATERSHED CONSERVANCY DISTRICTS.

THE TWIN PLATTE NATURAL RESOURCES DISTRICT IS LOCATED IN WEST CENTRAL NEBRASKA (see attached map) WHERE THE NORTH AND SOUTH PLATTE RIVERS COME TOGETHER TO FORM THE PLATTE RIVER.

I AM TESTIFYING TODAY IN REGARD TO FLOODING AND EROSION PROBLEMS ALONG THE PLATTE RIVER AND ITS TRIBUTARIES (North Platte and South Platte Rivers) IN NEBRASKA.

LAST YEAR, I TESTIFIED BEFORE YOU AND PROPOSED THAT $500,000 BE ALLOCATED TO SECTION 55 OF PUBLIC LAW 93-251 AUTHORITY FOR U.S. ARMY CORPS OF ENGINEERS TECHNICAL ASSISTANCE TO DEVELOP BANK STABILIZATION MEASURES FOR THE FOLLOWING SITE (see attached map):

1. 13-mile reach of the South Platte River from Hershey to the confluences of the North and South Platte Rivers east of the City of North Platte.

2. 5-mile reach of the North Plate River from 2 miles west of U.S. Highway 83 to the confluences of the North and South Platte Rivers east of the city of North Platte.

3. 28-mile reach of the Platte River from the confluences of the North and South Platte Rivers east of the city of North Platte to the Lincoln/Dawson County line (includes the 18-mile long Brady Island).

The benefits and justifications I cited were:

1. Experiences severe flooding and bank stabilization problems annually

2. Ideal Demonstration Model of a typical reach that would be beneficial Basin-wide.

3. A plan and design of measures by the river experts, the Army Corps of Engineers would allow the Federal, State and/or Local Agencies and the land owners to begin to protect the river banks and reduce the damages.

I AM PLEASED TO REPORT TO YOU THAT THE DESIGN OF MEASURES FOR THIS UNIQUELY IDEAL DEMONSTRATION REACH IS CURRENTLY FUNDED AND UNDERWAY DUE TO THIS COMMITTEE'S SUPPORT AND THE NEBRASKA CONGRESSIONAL DELEGATION PERSISTENCE WITH THE ADMINISTRATION.

SECONDLY, AGAIN THIS YEAR, AS I DID LAST YEAR, I AM PROPOSING THAT THE U.S. ARMY CORPS OF ENGINEERS AUTHORITY THAT EXISTED IN SECTION 32 OF THE WATER RESOURCES DEVELOPMENT ACT OF 1974 AND EXPIRED ON SEPTEMBER 30, 1982 AUTHORIZING CONSTRUCTION OF BANK STABILIZATION DEMONSTRATION PROJECTS, AGAIN BE AUTHORIZED AND FUNDED FOR THE PLATTE RIVER.

THE CONSTRUCTION OF DEMONSTRATION PROJECTS AT SELECTED KEY LOCATIONS ALONG THE PLATTE RIVER AND ITS TRIBUTARIES WOULD BE A VERY LOGICAL BEGINNING FOR A FUTURE COMPREHENSIVE BANK STABILIZATION PROJECT THROUGHOUT THE PLATTE RIVER AND ITS TRIBUTARIES BASIN.

THE NEBRASKA CONGRESSIONAL DELEGATION HAS INTRODUCED HR 6 AND S 539 TO PROVIDE THE NECESSARY AUTHORIZATION. I URGE YOUR SUPPORT OF THIS LEGISLATION.

I BELIEVE THAT THE 46-MILE REACH, PREVIOUSLY PROPOSED BY ME WOULD BE THE IDEAL FIRST DEMONSTRATION PROJECT. I WILL BE RETURNING TO REQUEST CONSTRUCTION FUNDS AS SOON AS THE DESIGN IS COMPLETED.

I WISH TO THANK THE COMMITTEE FOR YOUR SUPPORT LAST YEAR. IN THESE TIMES OF ECONOMIC HARDSHIPS, WE HAVE A DESIGN BEGUN TO ENSURE THAT SOMETHING WILL BE DONE AND AVAILABLE FUNDING WILL NOT BE SPENT FOR ANOTHER STUDY WITH NO FACILITIES CONSTRUCTED.

WATERLOO, IOWA, LOCAL PROTECTION PROJECT

STATEMENT OF DELMAN BOWERS, MAYOR, WATERLOO, IOWA

Mr. Chairman and Members of the Committee:

I am Delman Bowers, the Mayor of the City of Waterloo, Iowa. I reside at 1450 Ruth Street, Waterloo, Iowa.

I am accompanied today at this hearing by James N. Lindsey, 4220 Soo Line Drive, Waterloo, Iowa, a member of the Board of Directors of the Water Resources Congress and Administrator of Waterloo's Community Development Board; and Linda K. Allen, 1823 West 7th Street, Waterloo, Iowa, Grants Specialist for the City of Waterloo, Iowa, who have prepared statements for the record. Mrs. Allen and Mr. Lindsey have been closely involved in our flood control effort for many years.

We are pleased to have the opportunity to appear before the committee to inform you of our activites, our needs in the area of flood control, and to answer any questions you might have regarding our Local Flood Control Project.

The City of Waterloo experienced two of the most serious floods in its history brought on by a rainfall deluge in June and July 1969, during which millions of dollars worth of property was damaged and the City was placed in serious economic jeopardy. In 1961, 1962, 1964, 1965, and again in 1968, the City of Waterloo was declared a major disaster area by Presidents Kennedy, Johnson, and Nixon. Millions of dollars in emergency Federal financing poured into the City during these years to supplement the local expenditures involved in the flood recovery effort. During these tragic experiences, the morale of our people was high and the cooperation of the Federal and State officials was outstanding. The events of the summer of 1969 brought home the necessity of accelerating Public Works and Capital Improvements Programs to be coordinated with the Local Flood Control Program.

In comprehensive discussions carried on with the U. S. Army Corps of Engineers and with other experts in the field of flood control, we concluded that the best tools available to the City of Waterloo in carrying out a flood control program to a successful conclusion, would be to combine it with an Urban Renewal Program, extensive water and sewer installations, a flood plain management program, an increased park and open spaces project, and revitalization and reconstruction of our center city on either side of the Cedar River.

The principal reason we advanced the two programs of flood abatement and urban renewal simultaneously is that from the point of cost effectiveness the development of both programs would permit a level of planning and execution that would be most helpful to the locality and would provide the best utilization of local and Federal funds. Coordination of these two unique programs prevented duplication of efforts.

The Waterloo Local Flood Protection Project was authorized by the Flood Control Act of 1965, Public Law 89-298, in accordance with the House Document No. 166, 89th Congress, first session.

The estimated cost of the project at the time of authorization was: Federal $14,000,000; City $3,750,000. Total project cost $18,650,000. The Corps of Engineers have revised their estimates upward periodically. January 13, 1969 the estimated Federal cost was $16,500,000; City $5,650,000 for a total project cost of $22,150,000. April 30, 1973 the Federal cost was estimated to be $21,400,000; City $6,850,000; total cost $28,250,000. In October 1979 the estimated cost was Federal $32,260,000; City $10,140,000; total cost $42,400,000.

With construction of the flood protection devices nearing completion $42,192,328 has been spent or obligated by the Corps of Engineers for construction. The City has spent over $11,555,000 on land acquisition and related relocation. Six flood producing vehicular bridges have been demolished and rebuilt at an elevation in excess of the 100-year flood requirements at a cost to the City of $7,267,073. Costs in addition to the above have made the City's share to date in excess of $20,500,000. As you can see, the City has more than fulfilled its obligation to share in the cost of the project.

Private development as part of the Local Flood Control and Redevelopment efforts continue. Already the 126 acre industrial park which is a part of the unique program is producing environmental gains seldom achieved through standard industrial programs of this magnitude. Altogether 1,000 acres of park land, most of it in the flood plain, have been retained for permanent public use.

The citizens of Waterloo join me in thanking you for this invitation to appear as "outside witnesses" in support of a request of continued construction appropriations for the Waterloo Local Flood Control Project.

One of the tributaries to the Cedar River is Blowers Creek. Major flooding in the Blowers Creek watershed has occurred in recent years (1968, 1979, and 1980). This flooding

has caused significant property damage and hardship to the affected property owners. In the past, rescue operations during the flooding have been required to prevent potential loss of life. The Blower's Creek Watershed Flood Control project is completed with the exception of two bridges located on U.S. Highway 20 near the outlet of the watershed. The City of Waterloo presently is having an economic crisis unprecedented in the City's history. The two major industries in the City are Rath Packing Company and John Deere Tractor Works. Rath has gone bankrupt and closed. John Deere's factories are working at less than a third of their capacities causing a tremendous high percent of unemployment.

The City, without federal help, will be unable to meet the obligation to replace the bridges. If the bridges are not replaced, the narrow waterway will back-up floods causing water to overtop the dikes.

With an investment of Federal and non-Federal funds totaling nearly $63 million for protection from flooding by the Cedar River and Black Hawk Creek, flooding through the "back door" by Blowers Creek cannot be permitted. The Corps of Engineers recognized the impact Blowers Creek flooding would have on the Local Flood Control Project and the community and has under construction a Flood Protection Plan for Blowers Creek. Mr. Chairman, the City of Waterloo has supported the request of the U.S. Army Corps of Engineers budget request of $2.5 million for F.Y. 1984 and again in F.Y. 1985. We now respectfully request that the $2.5 million be included in the U.S. Army Corps of Engineers budget request for F.Y. 1986.

With over 98 percent of the Waterloo project completed, we are concerned that the Flood Protection Project remain on schedule and completed at the earliest date feasible. The need has been graphically demonstrated with the Cedar River, Black Hawk Creek, and Blowers Creek exceeding the flood stage several times in recent years. The awareness of potential flooding causes us to be grateful to Congress and the Corps of Engineers for the work that has been completed on schedule.

Mr. Chairman, it is imperative that we keep this project on schedule. We believe that our requests have been reasonable and timely. The project has received national attention because of the unique manner in which several Federal agencies, the State of Iowa, and the City of Waterloo have been able to coordinate their work. With this in mind and in the public interest, we respectfully request continued inclusion of the Waterloo Local Flood Control Project in the U. S. Army Corps of Engineers Capital Improvements Program.

STATEMENT OF JAMES N. LINDSEY, ADMINISTRATOR OF COMMUNITY DEVELOPMENT, WATERLOO, IOWA

Mr. Chairman and Members of the Committee:

Mr. Chairman, my name is James N. Lindsey and I reside at 4220 Soo Line Drive, Waterloo Waterloo, Iowa. I am the Administrator of Community Development for the City of Waterloo. I am appearing today in support of Mayor Delman Bowers on behalf of the Waterloo Local Flood Control Project. I am a member of and on the Board of Directors of the Water Resources Congress. The Water Resources Congress, as in the past, continues to wholeheartedly endorse the Waterloo Flood Control Project.

We have been informed that the U. S. Army Corps of Engineers has a capability to gainfully use the appropriation request for Fiscal Year 1985 of $2,500,000 if provided in the proposed Budget for continuation of construction of the Waterloo Project. The City has authorized the necessary local funds and has the administrative skills to collaborate with the Corps of Engineers in our flood control effort.

Mr. Chairman, with this in mind, my statement will serve to complete the record of the progress made to date in planning and executing a huge redevelopment and flood control program of significant benefit to the City of Waterloo. The Flood Control-Community Development Project being accomplished in Waterloo has been cited nationally for economic and social betterment in a metropolitan area while reducing local, State and Federal costs.

To date, the Waterloo Flood Control and Community Development Agency has made the following progress:

(i) In 1983 the City acquired 64 parcels of land at a cost of $482,100 as part of the flood protection project. Two businesses were relocated at a cost of $18,844. This increased the total right of way acquisition to 836 parcels costing $11,434,893. 513 families and 119 businesses have been relocated from the flood plain.

(ii) Arranged for and provided direct assistance to homeowners desiring to rehabilitate their property.

(iii) An Urban Development Action Grant was approved for redevelopment of a part of the Central Business District in the amount of $3,318,500. This has generated over $16,500,000 in private redevelopment. A portion of the private redevelopment was contingent on the Corps of Engineers construction of the flood wall and the City constructing a new bridge. The coordination of and joint funding by the Federal Government, City and private sector was completed during 1984.

(iv) Construction of a $3.5 million HUD financed Water and Sewer Program coordinated with flood control and community development activities to improve life for all of our citizens has been completed. Another City funded sewer and drainage project as part of the Local Flood Control Project was also completed at a cost of $110,000.

(v) Cost of private industrial development, resulting from the combined Flood Control-Community Development projects, either completed or for which commitments have been made, is valued at more than $146 million.

(vi) The City of Waterloo has been certified as eligible for Federal Flood Insurance.

(vii) The City and private sector have combined to form a Redevelopment Authority for the purpose of redeveloping the downtown. This redevelopment plan is being coordinated with the Flood Control Project through the downtown area.

(viii) Dry Run Creek area residents have been subjected to frequent flooding. The City completed one stage in the Flood Control Project for Dry Run Creek using City funds. A combined effort of the Corps of Engineers and the City provided additional flood control protection for Dry Run Creek residents resulting in cost savings to the Corps of Engineers and the City of Waterloo. The Iowa Department of Transportation is constructing another detention basin as part of the Dry Run Creek Flood Control Project in conjunction with construction of a new highway.

(ix) The U. S. Postal Service has occupied a new $4 million postal facility adjacent to the flood wall. Coordination in design between the Corps of Engineers and the Postal Service made construction on the site possible and resulted in savings to the Federal Government.

(x) Assumed maintenance responsibilities of those stages of the Flood Control Project that have been completed.

City representatives have appeared before this distinguished committee in previous years and outlined the goals and objectives which we had set for ourselves with the cooperation of local, State and Federal agencies. Many of these objectives have been attained.

Acquisition and project improvement programs have been correlated with flood control design and construction activities. The activities of each program are carefully staged in advance to assure funding availability, eliminate construction conflicts, and institute coordinated design and development results.

Mr. Chairman, I join those who have submitted statements and testimony in support of this project by asking that funds for the construction of two bridges be appropriated as part of the FY 1986 Budget. The Waterloo project, combining redevelopment with flood control, is unique in the Nation. Continued funding will assure proper timing, coordination, and could save the public appreciable expenditures in producing the desired beneficial effects. We sincerely appreciate all the assistance provided us. We believe it has been demonstrated the project has considerable merit.

In conclusion, I would remind the committee of the serious detrimental effects experienced by the citizens of this region because of frequent flooding resulting in extensive property damage and untold human suffering. We believe that a solution to the past history of economic and human loss can be corrected if additional construction funds for the Waterloo Local Flood Control Project are appropriated during this fiscal year. We are fully prepared to cooperate to achieve these goals. In so doing, we support the objectives of the President and Congress in the development of the FY 1985 Budget.

STATEMENT OF LINDA K. ALLEN, GRANTS SPECIALIST, WATERLOO (IOWA) COMMUNITY DEVELOPMENT BOARD

Mr. Chairman and Members of the Committee:

My name is Linda K. Allen. I reside at 1823 West 7th Street in Waterloo, Iowa. I am the Grants Specialist for the Waterloo Community Development Board. I am pleased to submit to your committee this prepared document in support of the statements of Mayor Bowers of Waterloo, Iowa, and Mr. Lindsey, Community Development Administrator. The feeling of other groups and individuals that have indicated support for the Waterloo Flood Control Project are also reflected in the statements.

The City of Waterloo has contributed to the coordinated effort with the U. S. Army Corps of Engineers by funding Planning Studies for the Central Business District, Dry Run Creek Flood Control, Blowers Creek Flood Control and other drainage areas in the City. Community participation and input were received as part of these studies through meetings and surveys for the planning of the flood control works. The Federal Flood Control Project has been complemented by construction of a locally-funded multi-million dollar Storm Sewer Detention Flood Control Project on Dry Run Creek to control "behind the levee" flooding.

Several alternate flood control concepts were evaluated with input provided from community-wide and "interested citizen group" meetings. As a result of the Central Business District Planning Study, a very aesthetically desirable concept, acceptable to the community and the U. S. Army Corps of Engineers, was developed for critical areas of the flood control works. This concept blends the flood control with the other downtown improvements. The Waterloo flood protection project has been selected twice as an award winner in the Chief of Engineers Design and Environmental Awards program. Awards were in the landscape architecture and engineering categories. Six old, low-arch bridges which were an obstruction to floods have been replaced. An additional new bridge is currently under construction. The design of City funded bridges and Flood Control devices are coordinated with the Corps of Engineers.

The Waterloo Flood Protection facility has been designed to join with the Flood Control Project recently completed for our neighboring community of Evansdale. Coordination of the Evansdale and Waterloo Flood Control Projects provided a continuity that reduced the Federal cost of the projects. The City of Waterloo supported this joint concept of flood control as a cost effective solution beneficial to all parties.

To conclude, Mr. Chairman, I join with other witnesses in support of this project by asking the appropriation of construction funds as soon as practical to complete construction of a project unique in concept, performance, and public acceptance. We are prepared now, as we have been in the past, to cooperate with the U. S. Army Corps of Engineers to accomplish this goal. The construction of the two final bridges will complete the entire flood control system in Waterloo, Iowa.

Your favorable consideration of the funding request will prevent loss and damage to property, danger to human life and other suffering that so many times has plagued our community during floods.

Thank you for the opportunity to present my statement to this committee.

MISSOURI, ARKANSAS, KANSAS PROJECTS

BRUSH CREEK PROJECT, KANSAS

STATEMENT OF JOHN MADGETT, PRESIDENT, MO-ARK ASSOCIATION

Mr. Chairman, I am John Madgett and I am appearing on behalf of the Mo-Ark Association and as the Chairman of the Water Resources Committee of the Greater Kansas City Chamber of Commerce.

This committee is in a position to authorize the funds for a study in our area that can eleviate a recurring and unnecessary loss. A loss that includes resources, finances, and human lives, twenty-five to be exact.

Over the period of a few years, the City of Kansas City, Missouri and those cities along Brush Creek in the State of Kansas, have experienced the loss of millions of dollars in flood damage. Our citizens and municipalities have invested hard earned capital in this area, which has been consistently expanding, year to year. Making it necessary to provide increased goods, services, facilities, and most important, JOBS. And with the proposed expansion and growth that is now taking place and the additional facilities planned for the near future, it is paramount that we address ourselves to eliminating the threat of future catastrophies.

But most importantly, Mr. Chairman, and members of the committee, I must confess to you that as a father and grandfather, I am not ashamed to admit that I have shed more than a few tears for the twenty-five lives that have been lost in Brush Creek, to date. Floods don't discriminate as to age, color, or sex, between children or adults.

You will hear from Councilman Riffel that Kansas City, Missouri is ready to "put their money were their mouth is". We are very well aware that the free lunch that was provided in saloons on our borders during the wild west days is gone, and also understand that we must share in the financing of this project with the Federal Government.

STATEMENT OF JAMES A. HEETER, COUNCILMAN AT LARGE, KANSAS CITY, MO.

I am James A. Heeter, Councilman at Large from the Fourth District of Kansas City, Missouri. I and my colleague are here today representing Mayor Richard L. Berkley and the City Council. Brush Creek passes through my district.

First we want to express our thanks for the start of construction on the Blue River channel improvement. The two contracts which are underway should be completed this year. We are very pleased with that start! But the Brush Creek project is being delayed because of lack of funding for final engineering design. This project is also extremely important to Kansas City, Missouri.

Brush Creek is an important tributary of the Blue River. It drains through the heart of Kansas City and has a basin of 29.4 square mile, lies in two states, three counties, and thirteen municipalities. It is indeed an interstate problem. But, the damages of the flood of 1977 were primarily within the boundaries of Kansas City, Missouri.

On September 12 and 13, 1977, the worst rain of record fell upon Kansas City, Missouri (16 inches in 24 hours). The two pictures here show the flood waters the evening of September 12. The next two pictures show the damaged area after the flood and were taken on September 13. The one on your left is damage to the Wornall Bridge, which has since been replaced by the City of Kansas City at a cost of $1.8 Million Dollars, and the one on your right was taken at Prospect Avenue, and is typical of the channel erosion that occurred during the flood. The final pair of pictures shows the damages to stores and businesses and the necessary clean-up throughout the Plaza, a most important shopping center in the Kansas City area.

The damages in 1977 amounted to $66.4 Million Dollars, caused the death of 25 people, and necessitated the removal of approximately forty homes in the flood plain.

The Corps of Engineers studied the problem and looked at a project from State Line Road to east of Prospect Avenue. A project for the full length would protect lives and property by keeping the devastating flood of 1977 within the banks for most of the length. The federal project finally proposed by the Corps' study is smaller because of the limitation imposed by your National Economic Development (NED) benefit cost ratio. To emphasize that, the NED pays attention only to the physical damage, the actual cost of replacement and rehabilitation, loss of inventory, equipment, etc. It does not recognize one dollar for a loss of life, nor one cent for square foot of developable property lost. The federal project lies in the middle of the total project and leaves a portion upstream and downstream to be constructed by the City.

There is no question but what the federal project can stand on its own merits, and can be constructed without the upstream or downstream project. But it doesn't make sense to construct it alone, from the standpoint of eliminating the flooding threat and of reclaiming the lands that are now unuseable because they are in the flood plain.

Councilman Jerry Riffel:

I am Jerry Riffel, Chairman of the Finance Committee, and Councilman from the Fourth District. We propose that the City share in the full project from State Line to Prospect. To that end, we need a federal appropriation for Continued Planning and Engineering (C. P. and E.) by the Corps of Engineers. We understand that they have a capability of $350,000. In that regard, the City has appropriated $200,000 to be added for engineering the entire project. I ask that you consider our contribution and direct the Corps to proceed with C. P. and E. for the entire project from State Line to Prospect. The City will act as coordinator, as well as sponsor, for the entire project.

For your information, the total project is estimated to cost $35.8 Million Dollars. The upstream project is estimated to cost $10 Million Dollars. The downstream project is estimated to cost an equal sum, and the sponsor's share of the federal project is in excess of $5 Million Dollars, for a total City contribution of about $25 Million Dollars.

This makes the federal contribution less than $11 Million Dollars. It is unfortunate that the NED does not allow for consideration of value of lives or loss of land for potential development. That's the only formula that may be used. The City, however, must consider the lives of its citizens and the developable property within its boundaries. Thus the reason for our willingness to pay the lion's share of the cost.

Again, we urge your consideration and support for the $350,000 appropriation for Continued Planning and Engineering on the Brush Creek channel improvement. The City supports the several projects in Missouri and Kansas, for which our delegation is appearing today. We further appreciate the opportunity to express our opinions to you for realistic support of the projects in adopting this year's budget.

HARRY S. TRUMAN DAM AND RESERVOIR

STATEMENT OF JOAN KIRCHHOFER, EXECUTIVE DIRECTOR, CLINTON (MO.) CHAMBER OF COMMERCE

Completion of the Harry S Truman Dam & Reservoir Project is an absolute necessity for the economic well being of our area.

As stated in the past, the loss of land has had great economic impact upon our area. Land losses can be and will be replaced by the industry of tourism, but it will take time. We are working hard to promote tourism. This week we are hosting our fourth annual media event. Thirty nine media from a twelve state area will be attending. We are doing everything we can to promote, but we must have this project completed to accomodate those people who do come.

Your continued support of this project to the full Corps capability will be appreciated.

STATEMENT OF ALLEN D. GILL, CITY ADMINISTRATOR, CLINTON, MO.

Please accept my greetings to you on behalf of the Mayor, Council and citizens of the City of Clinton, Missouri. I would like to thank you for your continued support of the Harry S. Truman Dam and Reservoir Project, and urge you to follow through on your commitment to see this project through to completion.

Development of this project removed thousands of acres of land from productive agricultural and commercial use, resulting in significant loss of tax revenues and erosion of the local economy. The City of Clinton is now experiencing growth and economic expansion resulting from tourism associated with Truman Reservoir. We hope this growth will offset our previous loss.

The proposed fiscal year 1986 appropriation for this project includes $5.7 million for construction of planned recreation facilities, roads and other improvements directly related to tourism. Completion of these improvements is needed to help our community recover the previous economic losses associated with the Reservoir construction. Development of our local economy is also necessary if we are to absorb services which are no longer being funded by the federal government.

We thank you for your continued support of this project, and we hope you will give this proposed appropriation your careful and thoughtful consideration.

STATEMENT OF BONITA TOWNSEND, PRESIDENT, CLINTON (MO.) TOURISM ASSOCIATION

We are again, as in years past, coming before your committee to plead the cause of funding for the Harry S Truman Reservoir.

We thank you for the opportunity.

Our project is very near completion, but the growth of a new industry, Tourism, a direct result of the formation of the Reservoir, is just beginning. Enough emphasis can not be placed on the importance to our economy of the completion of all the campgrounds, roads, toilets, boat ramps, shelters, etc., that must be done for public use.

The economy in our area is shifting from agriculture base to tourism and, as I am sure you are very aware, the plight of farmers and agri-business in our area is very severe. This points up another vitally important reason for this project to be completed in that we are swinging the economy toward tourism and, if it were not for Truman Lake, our town would be in a very depressed economic situation.

We are grateful for the response we have gotten from this committee in the past and encourage you to give this matter your utmost attention.

STATEMENT OF DAVID MILLS, PAST PRESIDENT, CLINTON (MO.) CHAMBER OF COMMERCE

As a Past President of the Clinton Chamber of Commerce, we are again asking you to see our need to complete the Harry S Truman Dam & Reservoir Project.

Tourism, a new industry to our area has been introduced as a result of the Reservoir Project. We are just starting to see the results of tourist dollars brought to our area after many years.

We need your continued support of the proposed 10.4 million dollars for continuing construction of the proposed recreation areas, operations and maintenance budget to the full capabilities of the Corps of Engineers.

As this marks our 21st year since the inception of Harry S Truman Dam & Reservoir we urge you to help bring this project to its completed state.

We wish to express our sincere appreciation for the appropriations in past years and we would again ask you to allow further appropriations to complete this project in order that we might recoup revenues that are so important to the economic growth of Clinton, Missouri.

Statement of Glen H. Elrod, President, Clinton (Mo.) Chamber of Commerce

As president of the Clinton Chamber of Commerce, I want to thank you for your past support of the Harry S Truman Dam & Reservoir Project. However, we are now very anxious to see the completion of a project started a quarter of a century ago.

Almost every city in our United States is fighting for industry. Tourism is Missouri's second largest industry, and we have been working very hard to take advantage of the opportunities that have been given us by the construction of this project.

The Tourism Committee of the Clinton Chamber of Commerce is very active and their projects are geared for the promotion of the lake area the economic growth of Clinton and the surrounding territory.

We are asking that you allow further appropriations for the completion of this project which in turn will make the Truman Dam & Reservoir a complete and attractive area that will attract more tourists.

Statement of Ron Arthur, President-Elect, Clinton (Mo.) Chamber of Commerce

During the past 20 years plus, the Harry S. Truman Dam & Resevoir has developed into one of the most beautiful and popular recreational, flood control, and power production facilities in the country. The foresight of yourselves and predecessors, the US Army Corps of Engineers, and countless other individuals and communities have developed this project to its superior potential.

It is my understanding that budgetary requests are two-fold; approximately 5.7 million dollars for 1986 construction, and approximately 4.7 million dollars for 1986 maintenance. The continuation of adequate funding is a paramount concern of our communities. Many superior facilities for campsites, marinas, and boat launching areas have been developed within the last several years. However, several sites remain to be constructed or completed. Funds requested for maintenance will be well spent at the $4.7 million level. Our attendance in the Truman lake area for 1985 should be in excess of 4,700,000; allowing maintenance cost to be less than <u>one tax dollar per visitor</u>.

I appreciate your continued support and consideration for the adequate funding of completion and maintenance of a superior, beautiful, valuable, and benefical project.

GARRISON UNIT, NORTH DAKOTA

STATEMENT OF WILLIAM A. BUTLER, VICE PRESIDENT FOR GOVERNMENT RELATIONS AND GENERAL COUNSEL, NATIONAL AUDUBON SOCIETY

Mr. Chairman and members of the Subcommittee:

On behalf of the 500,000 members of the National Audubon Society, I am here today about FY 86 funding for the Garrison Diversion Project.

We have testified before this Committee many times in the past and always in outright opposition to Garrison. This year we come before you with a different message.

1984 saw major and dramatic events with regard to Garrison. I would like to briefly review the major events and to discuss the current legislative status of the project. It is within this overall perspective that I offer to you our comments, concerns and position with regard to funding this project in FY 86.

The FY 85 Energy and Water Appropriations bill contained an extremely important provision -- one we hope signaled the end of this long and bitter controversy. I would like to thank the members of this Committee and especially you, Mr. Chairman, for your support for this provision. Section 207 of PL 98-360 found that the presently authorized Garrison project, among other things, raised significant economic, international and environmental issues and directed the Secretary of Interior to appoint a Commission to review these issues. Congress specifically charged the Commission to look at the contemporary water resource needs of the State of North Dakota and to propose alternatives which, among other things, would (a) lead to an early resolution of the controversy, (b) meet the contemporary water needs of the State, and (c) be responsive to the international, environmental and economic concerns.

The Commission -- a twelve member, blue-ribbon body -- was appointed by Interior Secretary Clark in August 1984. Over the next few months, it carefully considered, reviewed and evaluated a range of issues associated with the project. Audubon and other conservation groups, the State of North Dakota, the Garrison Conservancy District, the political leadership of the State, the Department of the Interior, landowners -- anyone with an interest in the project -- were provided opportunities to participate and present their views, evidence, arguments, and concerns to the Commission.

From this process emerged the Commission's final report and recommendations in December 1984. Garrison, as it has been known, is fundamentally changed. Shortly after publication of the final report, the North Dakota congressional delegation and both governors, in a news conference, expressed its support of the compromise. We have similarly expressed our support for this compromise as did Secretary Clark before leaving office.

It is important to emphasize that the Commission's final report and recommendations represent a compromise -- a compromise in the real and genuine sense of the word. That means that no one is entirely happy with it. For our part, the compromise contains features that cause us great concern. In fact, we recently testified before the House Interior Committee that if the compromise proposal came to us as a brand new project we would outright oppose it. But it is not coming to us -- or the Congress -- as a brand new water project. What is before us is an alternative to or modification of the presently authorized project. The alternative proposal, a marked improvement over the authorized project, will provide more benefits to North Dakotans at less environmental cost. As long-time advocates of the need to look for alternatives to Garrison, as supporters of the provision establishing the

Commission, and as active participants in the Commission process, we support the compromise proposal.

I am sure that we can all agree that without the work of the Commission, the Garrison controversy would have continued to fester like an open wound each year in the Congress. The battles over funding for the project would have continued, the sides would have remained polarized, and the constructive work of providing North Dakota with a water project which met its current needs and which minimized harm to the environment would have remained at a stalemate. The Commission has provided us all with the best opportunity in many years to resolve this controversy and take Garrison off the floors of the Congress and out of the courts.

The next step -- and a very critical one -- is to pass authorizing legislation to implement the findings and recommendations of the Garrison Commission. We hope that this will be a fairly non-controversial process, but we have had some indications that it may not be and we wish to share our concerns with you.

The findings and recommendations of the Garrison Commission provide for an approximately 130,000 acre irrigation project, with an enlarged M&I component to provide water to up to 130 towns and communities in the State. The reduction in overall irrigation acreage (from the authorized 250,000 acre project) and the significant up-scaling of the M&I portions of the project reflect the Commission's conclusions regarding the contemporary water needs of North Dakota. The compromise plan provides that certain features of the old project not be built -- mainly those irrigation units and related structures in the Hudson Bay drainage. Irrigation units along the James River are recommended instead. The Commission plan further made certain provisions with regard to areas of tremendous concern to us -- Kraft Slough and the Lonetree Reservoir.

When the Department of the Interior drafted legislation (which was introduced by Congressman Dorgan by request) it became dismayingly clear to us that the Commission's report was open to a broad range of interpretations. H.R. 1116, the bill drafted by the Department, does not accurately reflect the Commission report or the intent of its recommendations. It does not even come close. H.R. 1116 would create a new Garrison that is larger than the presently authorized project. It would authorize a 320,000 acre project; it would leave intact all of the rejected irrigation units in the Hudson Bay Drainage; it would resolve very few of the major issues at conflict; and it would raise the price tag to almost $2 billion dollars. This bill -- which apparently represents the Department's interpretation of the Commission's report -- would give the Department ultimate flexibility to build just about anything it wants in North Dakota -- the authorized project, the Commission's project, or some combination of the two. In short, H.R. 1116 would ensure that you and I and everyone else concerned about Garrison could continue to live with this controversy -- year in and year out -- over many years to come.

You may be assured that we will continue to work with the authorizing committees to ensure that legislation which faithfully and accurately implements the Commission's recommendations is reported out and enacted by the Congress. Unfortunately, it seems unlikely to us that the authorizing legislation will precede the appropriations bill this year.

Absent authorizing legislation which clearly spells out congressional intent with regard to the future development of the Garrison project, we are concerned just how funds appropriated for FY 86 will be spent. The Bureau's own project data sheet reflects some confusion and ambiguity on this point. For example, the cover page displays a FY 86 budget request for $41.3 million for the 250,000 acre project and shows an estimated overall construction cost of $1.289 billion. But the final pages of the project data sheet show all of the costs and features associated with building what we call the "plus-plus" plan -- the authorized 250,000 acre project, plus everything else new recommended by the Commission for a total cost of $1.8 billion. The Bureau itself is understandably unsure and unclear about what work it will eventually be required to do and the budget submission reflects this.

In looking further at the project data sheet, it is unclear whether the FY 86 construction program represents work on the 250,000 acre project or the "plus-plus" project, and how it reflects the Commission's recommendations. For example, let's look at Lonetree Reservoir. The Commission debated many long hours about the Lonetree Reservoir. I won't review that debate here, but I need only simply to say that the Commission specifically voted (8 to 4) to recommend that Lonetree Reservoir not be built. The Commission recommended Sykeston Canal be built as a functional replacement for Lonetree. As you well know, Lonetree is in many ways the center of the controversy. In recognition of the politically polarizing aspect of Lonetree, the Commission decided that Lonetree could remain an authorized feature of the project and left open the possibility for construction of Lonetree in the future if the Secretary of the Interior determined that there was need for it and if there had been a satisfactory conclusion of discussions with Canada. After such a secretarial determination, appropriations could be sought for construction of Lonetree.

The project data sheet shows that the Bureau plans to spend $3 million on Lonetree in FY 86. It is not at all clear whether the proposed work is for "mothballing" the site in accordance with the Commission recommendations, or for furthering construction consistent with the 250,000 acre authorized project. Because such ambiguity exists about what work the Bureau can and should do while Congress deals with the Commission's report and authorizing legislation, we recommend that this Committee provide the necessary clarity and direction to the Department.

I can appreciate the dilemma that the Department may find itself in. On the one hand, they must come to you for funds to operate next year but the only firm direction they have on Garrison is the existing authorization and Section 206 of the FY 85 Energy and Water Appropriations bill; on the other hand, as full and active participants in the Commission project, they know that there will be changes in and modifications to the existing process. They know what the Commission recommended, but they do not yet know what Congress will recommend.

During this hiatus, it is imperative that the Bureau not undertake any activities and spend funds which may preclude the implementation of the Commission recommendations and authorizing legislation or which may make the eventual implementation more difficult and costly.

Accordingly, we urge you -- in the strongest terms -- to take steps to minimize the controversy surrounding Garrison until Congress enacts appropriate authorizing legislation. The fiscally prudent course, it seems to us, would be to appropriate no funds for Garrison until Congress acts on authorizing legislation. Funds could be appropriated to implement such legislation at a later date. If, however, Congress determines that some funds should be appropriated now, we strongly urge that those funds be held in abeyance until the authorizing legislation is enacted. Similarly, we would ask that this Committee inform the department that it is the Committee's wish that none of the remaining unobligated FY 85 funds be spent on construction activities pending passage of authorizing legislation (and we urge report language to that effect). It may be that there are some non-construction activities which might appropriately go forward with FY 85 funds at this time, as long as the Committee was convinced that such activities would not in any way limit Congress' ability to enact authorizing legislation faithful to the Commission's proposal. Such permissible activities would have to be very carefully defined, but might include, for example, the M&I and groundwater recharge feasibility studies or the acquisition of lands in and around Kraft Slough for wildlife protection purposes. We would be happy to work with the Committee to recommend a narrowly prescribed list of activities.

During 1984 great progress was made toward resolving the Garrison controversy. It isn't resolved yet, but certainly we are closer than we ever have been. Authorizing legislation which provides clear and unambiguous congressional direction to the Interior Department as to what can and cannot be constructed in North Dakota should be the final step in ending this

conflict. Until that legislation is enacted, we turn to you to provide the much needed clarity and direction to the Interior Department, to make sure that no construction or other activities are undertaken which will limit Congress' ability to implement the Commission's findings or otherwise act with regard to the project. We believe that restricting the use of funds to construct Garrison until Congress passes the required authorizing legislation is the most prudent and fiscally responsible course to take.

Thank you for considering our views.

STATEMENT OF ESTHER R. EDIE, CHAIR, SOUTH DAKOTA RESOURCES COALITION

GARRISON DIVERSION UNIT

The Garrison Diversion Unit Commission added new irrigation areas but did not eliminate any authorized project features. As a result, the project has grown from 250,000 acres to 320,000, and the Department of the Interior now estimates the cost at $1.8 billion. At this time of huge national budget deficits and continuous farm surpluses with disastrously low farm prices, more irrigation and increased production are not what either North Dakota or the Nation needs. Can serious consideration be given to a federally funded project that costs almost $4000 per acre and more than $700,000 per farm at the same time that strenuous federal and state efforts are being made to keep farmers financially solvent enough to stay on their land?

Beneficiaries of the project—a relatively small number of prospective irrigators—will pay no interest on the irrigation investment, and they will repay only a small portion of construction costs. The rest will be charged to federal taxpayers and to Missouri River Basin power users including hard pressed dryland farmers. In addition, power users would have to furnish a further enormous subsidy in the form of 2.5 mill electricity for the project. The actual power loss because of on-farm irrigation use, distribution system pumping and generation capacity loss from withdrawal of water will be approximately 576 million kwh—almost six times that used by the Bureau of Reclamation in its cost/benefit studies for the authorized project. This would have to be replaced with coal generated power at more than triple present power costs.

If the Garrison Diversion Unit Commission's recommendation to increase irrigated acres in the James River valley to 113,500 (45,700 more than in the authorized plan) is adopted, South Dakota will have to look to the federal government to solve serious flooding and water quality problems. The James River is a shallow meandering prairie river straddling an important national wildlife refuge, and for almost 250 river miles it is a particularly rich wildlife and recreational resource. To serve as a drain for the Garrison Unit, it would have to be extensively channelized. While water quality would be extremely poor, especially during the first 50 years after project completion, irrigation interests in South Dakota hope to persuade Congress to fund a so-called Garrison extension project involving ringdikes, a North Dakota reservoir replacement for Lone Tree, floodways, dredging, wildlife mitigation and canals at a cost of several hundred million dollars.

We strongly urge that a moratorium be declared on all construction and funding of the Garrison Unit until the controversy is resolved and that the irrigation portion of the project be deauthorized.

CENTRAL SOUTH DAKOTA WATER SYSTEM (CENDAK)

The Central South Dakota Water System (CENDAK) is a $1.3 billion project that should not be authorized for the following reasons:

1. The cost/benefit ratio is 1.026 to 1 even with inflated Oct. 15, 1985, inflated farm prices used in the calculation. If farmers were actually getting $3.10/bu. for corn, $57 for alfalfa and $69.20 for fat steers, they wouldn't be looking to Washington for rescue. As you know the outlook for better prices is dismal.
2. Project beneficiaries can't afford CENDAK. Even though they must repay only a minor portion of construction costs, the costs of project operation, maintenance and replacement, capital investment, and on farm energy costs will be too high. Many farmers who signed up for the project had little idea of the costs involved, and a substantial number are expected to take advantage of a new state law that allows them to withdraw until January, 1986. There are many acres of privately irrigated land up for sale in the CENDAK area.
3. South Dakota is not an arid state. While various areas in the Northern Plains, including the CENDAK area, have an occasional drouth, an enormous irrigation project will not bail out farmers who cannot ride out an occasional dry spell. Dryland feed is always available from nearby areas, if a drouth occurs, and often at less cost than local irrigated feed. The argument that stabilization of the local feed supply justifies a $1.3 billion project is not reasonable.
4. Many farmers who want to irrigate could probably do so from ground water at considerably less cost. Much of the project area is unsuitable or only marginally suitable for irrigation, but so long as privately irrigated land is available for those who can afford to lose money while producing commodities at below the cost of production, a huge, expensive project like CENDAK should be unthinkable.
5. Because of very serious expected contamination of ground water with dissolved solids and nitrates, residents in the project area will no longer be able to use their wells. A rural water system has been recommended for the area. The area is peppered with non-participants in the project who will be forced onto expensive rural water. They will also be subjected to contaminated drainage from the project, and loss of land to canals and other project features. The James River will also be deteriorated in quality despite the Bureau of Reclamation's inclusion of a 23,000 ring dike so that dilution water from the Missouri River can be stored to help compensate for polluted return flow impacts from the project to the James River.

6. CENDAK backers are counting on 2.5 mill electricity, a huge subsidy rightly opposed by the Reagan administration on some other projects. Missouri Basin power users, including dryland farmers, pay 30 to 60 mills. Onfarm sprinkler operation, distribution system pumping and generation capacity loss because of CENDAK's 1.5 million acre feet water permit will force other power users to buy replacement power from coal fired generation at several times present costs.
7. The total FmHA farm loan debt in South Dakota as of Sept. 30, 1984, was $1,229,719,000. If the Congress has $1.3 billion to spend in South Dakota, we submit that the payment of this debt would be a much wiser investment than CENDAK, which is not only unneeded but would exacerbate the problems of overproduction and family farm financial stability. Irrigation farm debt is considerably higher than dryland farm debt, and irrigators are in as much or more trouble as dryland farmers.

We urge you to resist authorization and any further study funding of CENDAK. As for the argument that the federal government "owes" South Dakota a water project because of the "loss" of more than 500,000 acres of land when the Missouri River dams were built, it should be noted that at least up until 1982 or later, South Dakota consistently received more money back from the federal government than it remitted in taxes. Furthermore, the reservoirs themselves have provided substantial income to the economy from tourist dollars. It should be noted also that almost half the land submerged under the reservoirs was Indian land, but CENDAK (or any other irrigation project being pushed by South Dakota irrigation interests) does not benefit the Indian peoples in any way.

UPPER MISSISSIPPI RIVER FLOOD CONTROL PROJECTS

STATEMENT OF WILLIAM H. KLINGNER, PRESIDENT, UPPER MISSISSIPPI FLOOD CONTROL ASSOCIATION

For many years your Honorable Committee has granted the Upper Mississippi Flood Control Association the privilege of presenting oral and written testimony relative to Water Resources Projects and other flood control matters within the confines of our membership. Thanks once again. Our Association extends from Guttenburg, Iowa to Hamburg Bay, Illinois, some 350 miles along both sides of the Mississippi River and embraces that portion of the Mississippi River flood plain in the tri-state area of Missouri, Illinois and Iowa.

In presenting this testimony, our Association is keenly aware of the restraints placed upon the Army's Civil Works Program and the objectives of avoiding larger Federal budgetary deficits.

We are confining our requests to authorized studies and a brief status report on projects within our area.

A summary is as follows:

AUTHORIZED STUDIES

SURVEY AND STUDIES	BUDGETED	REQUESTS	REMARKS
1. South Quincy Drainage and Levee District, Illinois (FDP)	$320,000	$320,000	Complete (CP & E) See Discussic
2. Green Bay Levee and Drainage District, Iowa (FDP)	0	0	See Discussior
3. Muscatine Island Levee and Drainage District, Iowa (FDP)	0	$225,000	See Discussior

The above projects are herewith briefly discussed in order of sequence:

1. The "Final Feasibility Study for Flood Damage Reduction, South Quincy Drainage and Levee District, Illinois" has been completed and approved by all Federal and State Governmental Agencies. However, some continuing Planning and Engineering Funds are needed for FY86. These funds are included in the President's Budget for FY86.

   We respectfully urge your Honorable Committee to support retention of these funds.

   During the calendar year of 1984, and due to the projects support by the State of Illinois, an effort was made by the South Quincy Drainage and Levee District to secure project construction authorization prior to October 1985 in the hopes that initial construction could start in FY86. That now appears wishful thinking.

   A more realistic time frame for both the South Quincy and the Muscatine Island Projects and one that might be accomplished is attached for reference.

   The Illinois State Division of Water Resources has endorsed the South Quincy Project and has agreed to budget its part of the Sponsor's share of 35% of the Construction Cost and has executed a "Memorandum of Understanding", with the District dated October 24, 1984.

A companion "Letter of Intent" has been filed by the Drainage District with the Corps of Engineers, dated October 21, 1984. The estimated Project costs at that time were:

Total project cost.....	$13,300,000.00
Federal Costs @ 65%.....	$ 8,645,000.00
Non-Federal Costs @ 35%.....	$ 4,655,000.00

It is hoped that this project may continue to proceed on schedule with (C P and E) funds retained and authorization made by February 1986.

2. The Green Bay Levee and Drainage District No. 2, Iowa, Flood Control Project, is dormant due to lack of Federal interest.

After running the gauntlet of approximately nine years of study, dredging demonstration projects, inter-State and Federal Agreements, a C.O.E.design study or Survey Report based upon a 200 year flood frequency protection was completed. The Board of Engineers of Rivers and Harbors during review recommended that the protection be increased to a 500 year flood frequency design.

The Administration found that a 500 year design was not appropriate for Agricultural areas and questioned the proposed protection to the large Chemical Plant within the District. It is apparently felt that the Chemical Plant should afford it's own protection.

It is our understanding that in the Cost-Benefit analysis, benefits were not taken for probable damages of chemical spills into the River due to a levee failure. It would seem logical to give the C.O.E. a chance for rebuttal.

The Drainage District, as reported last year, has no serious objection to reverting back to the original design and cost basis of a 200 year frequency flood protection project, but agrees with the analysis of the Board of Engineers For Rivers and Harbors that a 500 year design is cost effective.

Due to the depressed Agricultural economy and the resulting depressed Agricultural Chemical Business, the Drainage District has not, at this time, attempted to resolve the dilemma by negotiating within the Chemical Plant for a mutually acceptable cost sharing Plan, one that the Federal Government might find acceptable.

We respectfully request that this project be further reviewed in the light of its merits and the tremendous amount of costs and efforts expended to date.

3. The Muscatine Island Levee and Drainage District and Muscatine Louisa County Drainage District No. 13, Iowa, Project has been returned to the Corps of Engineers, Rock Island District, for revisions and updating. Last year, it was felt that sufficient funds were on hand to complete the report. However, more funds are needed in FY86 to continue the study. The Corps of Engineers has expressed a capability of $225,000 for FY86.

We respectfully request that your Honorable Committee give serious consideration for funding the continuing study.

With the completion of the Study, the project should be in line for authorization.

May we again call to your attention our Association's views and concerns over some of the pending legislation or policies involving Water Resources Projects.

For example, some of our Member Districts have voiced concern over the South Quincy Drainage District's agreed cost sharing memorandum agreement of paying 35% of Project Cost for fear that it could set a policy, a policy that could make it very difficult, if not impossible, for many local sponsors to meet. There might not be another State rescue.

As reported last year, if cost sharing is inevitable, and we can understand the pressures and desires of the Administration and Congress, a flexible, non-rigid approach is suggested. A case by case determination would seem reasonable.

Our Association has serious reservations over the justification of a change in flood control policy over the Upper Mississippi River involving the Navigation system at this time for the simple reason that the Navigation system including the Locks and Dams, levees, and appurtenances are all a part of an integral system closely tied to human lives, recreation, the environment, and the economic vitality of the entire region. The projects under study are merely upgrading the system.

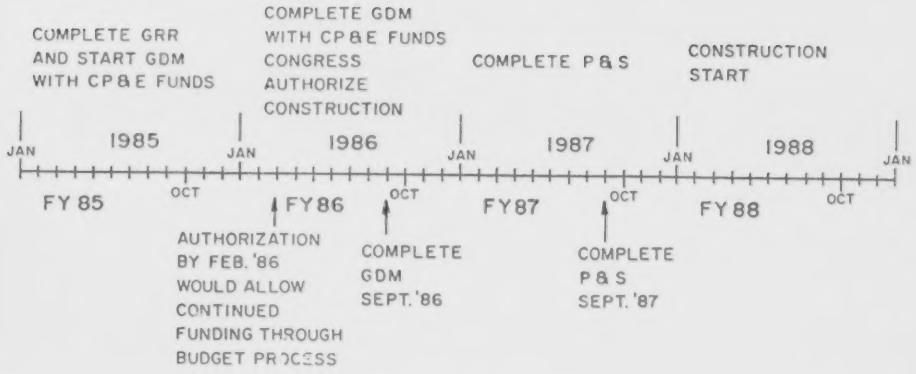
We believe flood control on major rivers is a Federal responsibility and should be evaluated, designed and constructed on a regional basis, not on a project by project basis.

May we be forgiven for again repeating our concern that Congress may become over zealous in establishing "USER FEES" on Navigation projects and "Cost-Sharing" on Water Resources Projects. USER FEES on the Upper Mississippi River System will bear most heavily on Agriculture since by far the vast majority of River transport is agriculturally related.

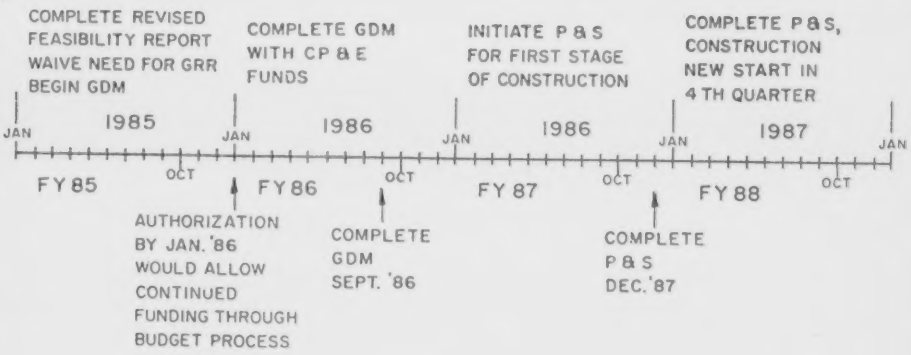
Lower cost water transportation is beneficial to all.

Thanks for the courtesy extended in allowing our Association to present this testimony.

SOUTH QUINCY



MUSCATINE



GRR – GENERAL REEVALUATION REPORT
GDM – GENERAL DESIGN MEMORANDUM
CP&E – CONTINUED PLANNING AND ENGINEERING
P&S – PLANS AND SPECIFICATIONS

TENNESSEE VALLEY AUTHORITY

STATEMENT OF HON. JIM SASSER, U.S. SENATOR FROM TENNESSEE

INTRODUCTION OF WITNESSES

Senator SASSER [presiding]. The committee will come to order.

I will ask our first group to come forward: The Honorable Richard Fulton, mayor of metropolitan Nashville; Don Collete of Chattanooga, past president of the Tennessee Valley Public Power Association; Marie Cirillo, Appalachia Community Development and president of Rural American Women of Clairfield, Tenn.; the Honorable G. Wendell Combs, secretary of tourism for the Commonwealth of Kentucky; Mr. Nick Crisler, president of the Tennessee River Valley Association from Decatur, Ala.; Mr. Harry Martin, executive director of the Community Development Foundation, Tupelo, Miss.; Mr. Mike Miller, president of the Association of Tennessee Valley Counties; and Mr. James Tucker, assistant director of the department of local government, Commonwealth of Kentucky.

Ladies and gentlemen, I want to welcome you this morning to this hearing before the Senate Subcommittee on Energy and Water Development.

I am pleased to welcome this distinguished delegation representing the citizens of the Tennessee Valley area. We are honored to have the distinguished mayor of metropolitan Nashville, the Honorable Richard Fulton, here this morning, acting as one of the spokesmen for this group. I want to pay tribute to the fine work that Tom Green has done in doing much of the State work to alert citizens of the Tennessee Valley area of the dangers to TVA. I am particularly pleased to have with us here this morning, over on the Senate side, our newest Congressman from the State of Tennessee, the Honorable Bart Gordon, who is doing a wonderful job and who has expressed a profound interest not just in TVA, but in many of the TVA projects across the valley, and most specifically those projects that are in his congressional district.

PROPOSED BUDGET REDUCTIONS

Let me just say at the outset that the administration has recommended a cut in the TVA appropriation in excess of 70 percent. Now this is an excessive cut. It would go a long way toward the destruction of the traditional role of the Tennessee Valley Authority in the Tennessee Valley region.

I believe, as I think all of you do, that TVA must bear its fair share of budget cuts in a time of great fiscal austerity. But TVA has already had 40 percent of its budget cut over the last 4 years.

We have just heard testimony before this subcommittee dealing with projects out West associated with or under the auspices of the Bureau of Reclamation. The budget of that particular Federal agency, which is about five times as large as the federally appropriated funding for TVA, has been cut only 20 percent this year. You lay that against the 70-percent cut for the budget of the Tennessee Valley Authority and you can

see why we feel, many of us, that the cuts are not being administered fairly and equitably.

ECONOMIC AND EMPLOYMENT CONDITIONS

Well, why should we resist cuts being made to the budget for the Tennessee Valley Authority? Purely and simply because the Tennessee Valley still lags behind the rest of the Nation in per capita income. Unemployment is higher in the region of the Tennessee Valley than in the rest of the country. We have not experienced in the Tennessee Valley the benefits of the so-called economic recovery that the rest of the country has experienced.

The increase in our economic growth and our economic productivity in the Tennessee Valley region simply has not matched that growth in other areas of the country. That is why we resist cuts in that portion of the Tennessee Valley Authority budget that deals with economic development. We resist cuts in the Tennessee Valley Authority budget that deal with soil erosion because Tennessee, and portions of Kentucky, together enjoy the dubious distinction of having the worst soil erosion problem of any of the 50 States.

Now, I feel certain that other members of this subcommittee will agree with me that a 70-percent cut is too much for the Tennessee Valley Authority to bear. And I am pleased—and I think it is an excellent straw in the wind—that the chairman of the full committee, Senator Mark Hatfield of Oregon, today indicated, or indicated some weeks ago, that he was amenable to us having these hearings and bringing witnesses before this subcommittee to deal with the subject of the TVA budget, after having first said there would be no open hearings.

I think it is too early now to say exactly how much the Congress will be able to restore to the TVA budget, but I feel certain that a substantial amount of the cut will be added back.

Let me say that we are going to hear first testimony relative to the Tennessee Valley Authority's budget and then later we will open up testimony to specific projects. I know we have a number of supporters here of the Columbia Dam project. Of course, we will want to hear from them after we get the general budget information.

I will turn to Congressman Gordon now and ask if he might have a statement he wishes to make.

STATEMENT OF HON. BART GORDON, U.S. REPRESENTATIVE FROM TENNESSEE

Mr. GORDON. When the announcement first was put forth that the TVA budget was going to be cut 70 percent, Senator Jim Sasser took the lead, brought the Tennessee delegation together, developed a plan of what we could do to restore this. Through his leadership, we have been working together. I think with your help today and with your visible support that we are going to be able to get something done. I want to thank the Senator for his initiative in helping us all pull together on this project.

Senator SASSER. Thank you, Congressman.

PREPARED STATEMENTS OF SENATORS STENNIS AND GORE

Before proceeding, I want to include in the record statements of Senator John Stennis of Mississippi and my colleague, Senator Gore. As you all know, they have actively supported TVA and have a strong interest in their activities.

Without objection, their statements will be made part of the record.

[The statements follow:]

STATEMENT OF SENATOR JOHN C. STENNIS

Mr. CHAIRMAN:

I appreciate this opportunity to join with these fine community leaders who appear here today to support the economic development program of the Tennessee Valley Authority.

These programs, along with the economic assistance programs of the Appalachian Regional Commission and the Economic Development Administration, have been targeted for elimination or severe reduction without regard for the importance of those programs in making economic development possible in many rural areas. I have and shall continue to urge that the Congress refuse to make such reductions.

I can speak from firsthand knowledge that these programs are vital to the future of many of the areas that were hardest hit during the recent recession. These areas are still struggling to recover, and it would be a death blow to many of them if these programs were eliminated or reduced as severely as the Administration has proposed.

No other member of this body is more concerned about reducing the federal deficit than I. For the last ten years I have been preaching the importance of bringing the budget under control. However, we must be careful not to cut spending in a counter-productive way. It would be very costly to the nation's economy and to the Federal treasury to allow unemployment and under-utilization of the resources in these areas to persist.

The TVA programs are highly effective technical assistance programs. They are not a hand-out program. They are designed to help the people help themselves. I know from experience in my own state and my own county that these programs work. They help the communities in creating jobs--jobs that are desperately needed.

I know of no way that these rural communities can compete without the assistance of these programs. The economy is going through dramatic and far-reaching changes. We are all feeling the effect of these changes, but regions that have concentrations of manufacturing, or that have been hit by strong foreign competition, are feeling the full adverse force of the economy's change. At this time it would be unwise and very risky to cut the very programs which have proven records of effectiveness in job creation.

Reducing the deficit is a top priority with me, but it would be a false savings to terminate the work of the TVA.

STATEMENT OF SENATOR ALBERT GORE, JR.

Mr. Chairman, I am pleased to be able to add my concerns to those present today, about the extreme damage the proposed TVA budget cut would have in the Tennessee Valley.

I know you have heard the inventory of benefits to our region and the entire country as a result of a modest investment in these TVA programs. In every case we see a program mission that is clearly defined and effectively put into the field.

-- The fertilizer research and development programs have produced cost efficiencies through coordinated product development which would have been impossible through private sector work alone. Moreover, the program has stimulated the growth of and competition amond hundreds of small fertilizer companies throughout the country. Without this vital agricultural program we would see an unhealthy concentration in the fertilizer industry, with farmers and consumers ultimately the losers.

The TVA natural resources program is one of the major efforts to address the growing problem of acid rain. This program will end entirely under the administration- and the Budget Committee- plan.

The agricultural resources program provides special services for farm operations-- services which are not available from any other federal, state, or private entity, services which have helped thousands of farmers deal with special problems falling outside traditional agency areas.

TVA's maintains a vital wildlife and recreational facility, Land Between the Lakes, which is becoming a national natural

resource conservation and study center. This operation would be entirely abandoned under the proposed budget.

There are other important problems which are uniquely and successfully addressed through TVA's appropriated budget, such as special coordination services TVA provides local communities in attracting new industry and jobs to the region.

We have heard that the justification for eliminating practically the entire TVA budget is that other public and private agencies will pick up the worthwhile work. The fact is, Mr. Chairman, that other public agencies are as strapped as TVA in fulfilling their public missions, and are unlikely to take on new tasks under shrinking budgets. And almost without exception, private businesses are simply not equipped to address the kind of broad=-based problems which are the focus of these TVA efforts.

And it should be noted that TVA has already undergone a 40% budget reduction over the past three years. I join the residents of the Tennessee Valley in offering to do our fair share, but I am absolutely opposed to the kind of devastatingly unfair cuts we .re asked to accept under the administration and the Budget Committee plans.

Mr. Chairman, I know this Committee is going to be fair when it considers TVA's budget for the upcoming year. M y colleague from Tennessee, Senator Sasser, has argued TVA's case eloquently during your past deliberations. I want to join all of TVA's supporters from Tennessee here today to let you know that Senator Sasser is not alone. We are going to work as hard as we can to let the Congress know how important this issue is for Tennessee and the entire country.

Thank you for allowing me to testify.

STATEMENT OF RICHARD FULTON, MAYOR, METROPOLITAN NASHVILLE AND DAVIDSON COUNTY

Senator SASSER. We will begin this morning with the distinguished mayor of Nashville, Tenn., Mayor Richard Fulton.

Mayor, we are delighted to have you here. We welcome you here. I look forward to hearing your statement.

Mr. FULTON. Thank you, Mr. Chairman, and Representative Gordon. I appreciate very much the opportunity to appear before you and to ask at this time unanimous consent that my entire statement be made a part of the record.

Senator SASSER. It will be made a part of the record.

[The statement follows:]

STATEMENT OF RICHARD H. FULTON, MAYOR, NASHVILLE, TENN.

MR. CHAIRMAN, I AM RICHARD FULTON, MAYOR OF THE CITY OF NASHVILLE, TENNESSEE AND I AM PLEASED TO HAVE THE OPPORTUNITY TO TESTIFY BEFORE THE SUBCOMMITTEE ABOUT THE ADMINISTRATION'S FISCAL 1986 BUDGET PROPOSAL FOR THE TENNESSEE VALLEY AUTHORITY.

I APPEAR BEFORE THE SUBCOMMITTEE AS A REPRESENTATIVE OF THE CITIZENS FOR T.V.A. WE ARE A GRASS-ROOTS ORGANIZATION COMPOSED OF ELECTED OFFICIALS, INVOLVED GROUPS, AND CONCERNED CITIZENS FROM THROUGHOUT THE TENNESSEE VALLEY.

I THINK IT SHOULD BE UNDERSTOOD AT THE OUTSET THAT OUR GROUP'S OBJECTIVE IS TO PRESERVE TVA'S FUNDAMENTAL MISSION IN OUR REGION. WE SEE THE PRESIDENT'S PROPOSED ALLOCATION OF $38.6 MILLION FOR TVA'S ECONOMIC AND NATURAL RESOURCE DEVELOPMENT EFFORTS AS A BUDGETARY ASSAULT ON THE LEGISLATION THAT CREATED TVA 52 YEARS AGO.

WE ARE NOT HERE TO ARGUE THAT TVA'S BUDGET IS SACRED, OR THAT TVA CANNOT FIND WAYS TO INCREASE EFFICIENCY AND ECONOMY IN ITS PROGRAMS. WE EXPECT TVA TO ACKNOWLEDGE -- AS ALL GOVERNMENT AGENCIES MUST ACKNOWLEDGE -- THAT THE NATION FACES A DEFICIT CRISIS OF MAJOR PROPORTIONS AND THAT WE MUST WORK TOGETHER TO REDUCE THE FEDERAL BUDGET IN VIRTUALLY EVERY AREA.

ALL FEDERAL GOVERNMENT DEPARTMENTS AND AGENCIES SHOULD ACCEPT THEIR FAIR SHARE OF THE DEFICIT-REDUCTION BURDEN. BUT I EMPHASIZE MR. CHAIRMAN, THE PHRASE "FAIR SHARE."

WE BELIEVE THAT THE PEOPLE OF THE TENNESSEE VALLEY ARE PREPARED TO ENDURE A REDUCED LEVEL OF FUNDING FOR IMPORTANT TVA PROGRAMS. WE BELIEVE THAT TVA CAN SURVIVE REASONABLE BUDGET CUTS.

BUT A 71 PERCENT REDUCTION IS NOT TVA'S "FAIR SHARE." A BUDGET CUT IS NOT REASONABLE IF IT ARBITRARILY ELIMINATES WHOLE AREAS OF TVA'S MANDATED RESPONSIBILITY. AND THE TVA IDEA -- WHICH HAS SERVED THIS NATION AS WELL AS THE TENNESSEE VALLEY -- THE TVA IDEA CANNOT SURVIVE IF THE AGENCY'S CHARGE IS LIMITED TO POWER PRODUCTION.

I WOULD POINT OUT TO THE SUBCOMMITTEE THAT THERE IS A CERTAIN MEASURE OF IRONY IN THE FACT THAT THE PRESENT ADMINISTRATION HAS PRESIDED OVER THE CREATION OF THE DEFICIT CRISIS, AND NOW IS USING THAT CRISIS TO JUSTIFY THE ELIMINATION OF PROGRAMS IT FINDS PHILOSOPHICALLY UNAPPEALING.

WE BELIEVE THAT THE ADMINISTRATION'S PROPOSED BUDGET FOR TVA REPRESENTS AN UNWISE AND UNJUST APPROACH TO DEFICIT REDUCTION. WE ARE HERE TO EXPRESS OUR CONVICTION THAT TVA CAN INDEED MAKE A CONTRIBUTION TO THE DEFICIT REDUCTION BATTLE, AND STILL BE ALLOWED SUFFICIENT FUNDING TO PURSUE ITS VITAL OBJECTIVES AS A PROMOTER OF RESOURCE AND ECONOMIC DEVELOPMENT IN THE TENNESSEE VALLEY.

WE EXPECT TVA TO TAKE ITS "FAIR SHARE" OF NECESSARY BUDGET REDUCTIONS. BUT WE ALSO HOPE AND EXPECT THAT TVA WILL BE GIVEN A "FAIR SHARE" OF FUNDING FOR PROGRAMS THAT ARE RELIED UPON BY PEOPLE IN THE TENNESSEE VALLEY -- PEOPLE WHO WILL HAVE NO WAY TO COMPENSATE FOR THE LOSS OF THOSE PROGRAMS.

AT THIS CRUCIAL TIME IN THE ECONOMIC HISTORY OF OUR NATION, WE MUST DRAW CLEAR DISTINCTIONS BETWEEN WASTEFUL GOVERNMENT SPENDING AND INVESTMENTS IN THE COUNTRY'S ECONOMIC FUTURE. THE ISSUE SHOULD NOT BE ONE OF IDEOLOGY. IT SHOULD BE A QUESTION OF WHAT WORKS FOR THE PEOPLE AND THE ECONOMY OF THE NATION. I SUBMIT, MR. CHAIRMAN, THAT THE TVA IDEA WORKS. THE IMPULSE BEHIND THE CREATION OF TVA WAS A BIPARTISAN RECOGNITION THAT THE TENNESSEE VALLEY STATES WERE BADLY DEPRESSED, WERE UNDEVELOPED, AND WERE THEREFORE NOT CONTRIBUTING TO THE ECONOMIC PROGRESS OF THE NATION.

IT WAS PRESUMED THAT FEDERAL INVESTMENTS IN THE VALLEY STATES WOULD PAY OFF MANY TIMES OVER IN THE FORM OF MORE JOBS. A HIGHER PER CAPITA INCOME AND MORE TAX DOLLARS FLOWING INTO THE FEDERAL TREASURY.

THOSE PRINCIPLES PROVED TRUE. SINCE TVA'S CREATION 52 YEARS AGO, THE PER CAPITA INCOME OF THE VALLEY HAS RISEN FROM ABOUT 40 PERCENT OF THE NATIONAL AVERAGE TO ABOUT 80 PERCENT. THAT RISE HAS REPRESENTED A MAJOR CONTRIBUTION TO OUR NATIONAL ECONOMIC STRENGTH AND THE FEDERAL TAX BASE.

THERE IS STILL ROOM FOR PROGRESS IN THAT SAME DIRECTION, AND THERE IS STILL EVERY REASON TO EXPECT THAT TVA CAN BE A MAJOR MOTIVE FORCE BEHIND ECONOMIC ADVANCEMENT IN THE TENNESSEE VALLEY.

THE TRUTH IS THAT, FAR FROM BEING A "BUDGET-BUSTER," THE TVA ANNUAL APPROPRIATION IS WORKING TO REDUCE THE FEDERAL DEFICIT BY HELPING CITIES AND COUNTIES IN THE TENNESSEE VALLEY THAT HAVE UNDERGONE SEVERE ECONOMIC HARDSHIPS DURING THE LAST RECESSION AND ITS AFTERMATH.

I BELIEVE THAT THE INDIVIDUALS AND GROUPS THAT MAKE UP THE CITIZENS FOR TVA CAN TESTIFY TO THE FACT THAT TVA PROGRAMS ARE EFFECTIVE AND THAT THEY ARE ADDRESSING REAL NEEDS.

THE TENNESSEE VALLEY IS RICH IN ECONOMIC POTENTIAL BECAUSE IT IS RICH IN USABLE NATURAL RESOURCES. BUT THAT POTENTIAL HAS NOT YET BEEN ADEQUATELY TAPPED, AND AS A CONSEQUENCE BOTH THE PEOPLE OF OUR REGION AND THE NATIONAL ECONOMY ARE SUFFERING.

UNEMPLOYMENT IN THE VALLEY STATES IS UNACCEPTABLY HIGH. IN SOME RURAL COUNTIES, IT REMAINS AT VIRTUAL DEPRESSION LEVEL. AT THE BEGINNING OF THE 1985 FISCAL YEAR, ABOUT ONE OF EVERY FOUR COUNTIES IN THE TENNESSEE VALLEY HAD RECORDED UNEMPLOYMENT RATES AT LEAST TWICE AS HIGH AS THE NATIONAL AVERAGE.

IN 1984, THE AVERAGE UNEMPLOYMENT RATE IN THE UNITED STATES WAS 7.6 PERCENT. IN THE TENNESSEE VALLEY AUTHORITY'S SERVICE AREA, IT WAS 9.6 PERCENT.

IN MY OWN STATE OF TENNESSEE, AGRICULTURAL AREAS HAVE BEEN SEVERELY HIT BY THE VARIOUS FORCES THAT ARE NOW THREATENING THE VERY EXISTENCE OF THE FAMILY FARM.

A HIGH PERCENTAGE OF TENNESSEE'S WORKFORCE IS IN MANUFACTURING. THOSE TENNESSEANS HAVE STILL NOT RECOVERED FROM THE HIGH INTEREST RATES AND INFLATION THAT DEPRESSED THE DURABLE GOODS SECTOR IN THE EARLY '80S.

LOWER INCOME TENNESSEANS -- WHETHER THEY LIVE IN THE APPALACHIAN AREA OF THE EAST, ON THE FARMS OF MIDDLE AND WEST TENNESSEE, OR IN THE CENTER CITY OF MEMPHIS -- LOWER INCOME TENNESSEANS HAVE ALREADY ENDURED CUTS IN DOMESTIC PROGRAMS THAT ONCE HELPED THEM TO MAKE ENDS MEET.

I BELIEVE THAT EVERY STATE REPRESENTED BY CITIZENS FOR TVA CAN OFFER A SIMILAR CATALOGUE OF STUBBORN ECOMONIC DEVELOPMENT PROBLEMS -- MOST OF THEM CREATED OR INTENSIFIED IN THE 1980S.

THE TRUTH IS THAT THE FACTORS INHIBITING THE RECOVERY OF THE VALLEY ARE CONSEQUENCES OF A NATIONAL ECONOMIC POLICY THAT HAS TENDED TO ENHANCE WEALTHY REGIONS AND IMPOVERISH POORER ONES.

GIVEN THOSE FACTS, IT SEEMS UNFAIR TO RUB THE SALT OF FURTHER TVA BUDGET CUTS IN THE TENNESSEE VALLEY'S ECONOMIC WOUNDS.

THE PRESIDENT'S PROPOSED BUDGET WOULD TOTALLY ELIMINATE ECONOMIC DEVELOPMENT ASSISTANCE TO VALLEY COUNTIES -- MANY OF WHICH SIMPLY DO NOT HAVE THE TECHNICAL RESOURCES TO ADDRESS THEIR ECONOMIC DEVELOPMENT PROBLEMS IN ANY KIND OF EFFECTIVE WAY.

THE PROPOSED BUDGET WOULD ELIMINATE ASSISTANCE TO EXISTING INDUSTRIES THAT WANT TO EXPAND AND TO MINORITY BUSINESS ENTERPRISES THAT MAY BE ON THE VERGE OF DEVELOPMENT.

IT WOULD ELIMINATE HIGH-TECH SKILLS TRAINING PROGRAMS BEING CONDUCTED IN SEVERAL VALLEY STATES, ALONG WITH AN INDUSTRIAL TRAINING CENTER AND A PRIVATE ENTERPRISE INCUBATION CENTER.

IT WOULD ELIMINATE HELP FOR VALLEY STATES IN PREPARING WATER QUALITY MANAGEMENT PLANS FOR TVA RESERVOIRS, DEMONSTRATIONS AND ASSISTANCE IN SURFACE WATER POLLUTION CONTROL, AND COOPERATIVE EFFORTS TO HELP CLEAN UP TOXIC CONTAMINANTS.

THE BUDGET WOULD TOTALLY WIPE OUT EFFORTS TO HELP STIMULATE A MORE PROFITABLE FOREST PRODUCTS INDUSTRY IN THE TENNESSEE VALLEY, AND WOULD ELIMINATE TVA'S PART IN HELPING TO GET THE MOST OUT OF THE NATION'S INVESTMENT IN THE NEW TENNESSEE-TOMBIGBEE WATERWAY.

THE BUDGET WOULD END TVA ASSISTANCE TO THE NEEDIEST VALLEY FARMERS, AND WOULD PUT A HALT TO PROGRAMS FOR DEVELOPING NEW CASH CROPS.

TVA'S PART IN THE REGION-WIDE EFFORT TO REDUCE SOIL EROSION AND STREAM SILTATION WOULD BE GONE.

AND TVA WOULD NO LONGER MANAGE AND OPERATE LAND BETWEEN THE LAKES -- ONE OF THE ONLY OUTDOOR RECREATIONAL AND ENVIRONMENTAL LABORATORIES OF ITS KIND IN THE COUNTRY.

THAT IS ONLY A PARTIAL LIST OF THE PROJECTS THAT WOULD BE AFFECTED, AND FRANKLY, MR. CHAIRMAN, WE CAN SEE NO POSSIBILITY THAT THE STATES OR OTHER FEDERAL BODIES WILL BE WILLING OR ABLE TO PICK THEM UP.

IT IS OPTIMISTIC AT BEST TO SUPPOSE THAT FEDERAL AGENCIES WILL CONSIDER TAKING NEW RESPONSIBILITIES WHEN ALL BUDGETS ARE BEING CUT. AND IT IS MORE OPTIMISTIC STILL TO HOPE THAT STATE AND LOCAL GOVERNMENTS CAN CONTINUE TO FUND ALL THE FUNCTIONS THAT ARE ABANDONED BY WASHINGTON -- ESPECIALLY FUNCTIONS THAT ARE AIMED AT PRODUCING REGIONAL AND NATIONAL BENEFITS.

ALL OF THAT IS SIMPLY ANOTHER WAY OF SAYING THAT TVA'S PROGRAM FOR STIMULATING THE ECONOMY OF THE TENNESSEE VALLEY IS UNIQUE. IT DOES NOT DUPLICATE OTHER GOVERNMENT FUNCTIONS. IT DOES NOT UNDERTAKE RESPONSIBILITIES THAT THE PRIVATE SECTOR WILL RUSH TO ASSUME.

EVEN IF THERE WERE GROUPS WAITING IN THE WINGS TO FILL TVA'S ROLE IN THE TENNESSEE VALLEY, IT MAKES LITTLE SENSE TO SHIFT NECESSARY PROJECTS TO ORGANIZATIONS THAT DO NOT HAVE A PROVEN TRACK RECORD OF PERFORMANCE.

TVA HAS THAT TRACK RECORD. IT HAS A LONG HISTORY OF ACCOMPLISHMENT THAT GROWS OUT OF THE GENIUS OF THE TVA ACT. PERHAPS THE MOST DISHEARTENING ASPECTS OF THE PRESIDENT'S BUDGET PROPOSAL IS THAT IT WILLFULLY ATTEMPTS TO DO AWAY WITH AN IDEA THAT HAS BEEN A MODEL OF SUCCESS FOR OTHER REGIONS AND FOR MANY OTHER NATIONS.

THE LEGISLATION THAT CREATED THE TENNESSEE VALLEY AUTHORITY EMBODIES A SET OF PRINCIPLES ABOUT RIVER BASIN DEVELOPMENT -- PRINCIPLES THAT HAVE PROVEN THEMSELVES VISIONARY, ADAPTABLE, AND SUCCESSFUL.

HOW TO GET THE MOST OUT OF A WHOLE GEOGRAPHICAL AREA; HOW TO DEVELOP A RIVER FOR NAVIGATION, FLOOD CONTROL, AND RECREATION AS WELL AS HYDROELECTRIC GENERATION; HOW TO MANAGE REGIONAL RESOURCES FOR SHORT-TERM ECONOMIC ADVANTAGE AND LONG-TERM PRODUCTIVITY; THOSE ARE SOME OF THE LESSONS THAT TVA HAS QUITE LITERALLY TAUGHT THE WORLD.

IT SEEMS VERY CLEAR TO THOSE OF US WHO HAVE THE ADVANTAGES OF TVA'S BROAD MISSION THAT THE INTENT OF THE PRESIDENT'S BUDGET GOES BEYOND MERE BUDGET REDUCTION. IF THIS BUDGET PROPOSAL IS ACCEPTED BY CONGRESS, THE HEART AND SOUL OF THE TVA IDEA WILL BE, FOR ALL PRACTICAL PURPOSES, REMOVED AND ELIMINATED.

IF TVA BECOMES SIMPLY A UTILITY, THE OBVIOUS NEXT STEP IS TO ARGUE THAT THERE IS NO REASON FOR THE GOVERNMENT TO OWN A POWER COMPANY. AN ATTACK ON THE IDEA OF PUBLIC POWER IN THE TENNESSEE VALLEY WOULD, IT SEEMS TO ME, BE THE LOGICAL CONCLUSION OF THIS YEAR'S BUDGET PROPOSAL.

FOR ALL THOSE REASONS, MR. CHAIRMAN, WE ARE ASKING FOR REASONABLE AND EQUITABLE TREATMENT OF TVA'S APPROPRIATION THIS YEAR AND IN COMING YEARS.

I REPEAT THAT WE EXPECT TVA TO BE FLEXIBLE. WE EXPECT TVA TO BE SENSITIVE TO A DEFICIT PROBLEM THAT WE ALL HAVE A STAKE IN SOLVING.

WE ASK ONLY AN ADEQUATE LEVEL OF FUNDING TO MAINTAIN TVA'S NECESSARY PROGRAMS AND TO SUSTAIN ITS VITAL HISTORICAL MISSION.

WE ASK ONLY TVA'S "FAIR SHARE" AND WE BELIEVE THAT THE MEMBERS OF THE SUBCOMMITTEE AND THE CONGRESS AS A WHOLE WILL RECOGNIZE THE JUSTICE OF OUR REQUEST.

IMPACT OF BUDGET REDUCTIONS

Mr. FULTON. I am sorry that Senator Abdnor had to leave before we had the opportunity to speak. I was going to tell him that it is my intention to communicate with each of the Tennessee representatives in the House and Senate, asking them to support his many needed projects in South Dakota, and of course asking for some consideration for the Tennessee Valley at the same time.

I also want to express my continued support for the Columbia Dam project, the project that I supported the many years that I was in Congress and the project that I still support wholeheartedly.

Mr. Chairman, due to the hour as well as the number of people that are here to testify on behalf of the Tennessee Valley region, I am just going to read four or five paragraphs with reference to the President's proposed budget which would totally eliminate economic development assistance to valley counties, many of which simply do not have the technical resources to address their economic development problems in any kind of effective way.

The proposed budget would eliminate assistance to existing industries that want to expand and to minority business enterprises that may be on the verge of development.

It would eliminate high-tech skills training programs being conducted in several valley States, along with an industrial training center and a private enterprise incubation center.

It would eliminate help for valley States in preparing water quality management plans for TVA reservoirs, demonstrations, and assistance in surface water pollution control, and cooperative efforts to help clean up toxic contaminants.

The budget would totally wipe out efforts to help stimulate a more profitable forest products industry in the Tennessee Valley and would eliminate TVA's part in helping to get the most out of the Nation's investment in the new Tennessee-Tombigbee Waterway.

The budget would end TVA assistance to the neediest valley farmers and would put a halt to programs for developing new cash crops.

TVA's part in the regionwide effort to reduce soil erosion and stream siltation would be gone.

And TVA would no longer manage and operate Land Between the Lakes, one of the only outdoor recreational and environmental laboratories of its kind in the country.

Mr. Chairman, I think that it is vital not just to the Tennessee Valley region but to our country that this creation, the creation of the Franklin Roosevelt administration and of the Republican Senator from the northwestern part of the country, Senator Norris, that it not be drastically cut. We understand the need to cut some, but as you mentioned in your opening statement, we are looking for a fair share for TVA.

Thank you very much.

Senator SASSER. Thank you very much, Mayor.

We will just pass the microphone down. For the purpose of the record, I know who everybody is but our court reporter doesn't, so if you would identify yourselves and the organization you represent.

STATEMENT OF DON COLLETE, PAST PRESIDENT, TENNESSEE VALLEY PUBLIC POWER ASSOCIATION

Mr. COLLETE. Mr. Chairman, Representative Gordon, I am Don Collete, general manager of the McMinnville Electric System. I am immediate past president of the Tennessee Valley Public Power Association, and my testimony here today is presented on behalf of that association. I would like to submit our entire statement for the record.

Senator SASSER. It will be included in the record.

Mr. COLLETE. Thank you.

[The statement follows:]

STATEMENT OF THE TENNESSEE VALLEY PUBLIC POWER ASSOCIATION

The Tennessee Valley Public Power Association is a regional organization representing the 110 municipal electric systems and the 50 rural electric cooperatives that purchase electric power at wholesale from the Tennessee Valley Authority (TVA). These 160 distributors resell that power on a non-profit basis to the 8 million people located in the seven Tennessee Valley States.

The distributors of TVA power are principally involved in TVA's power program, which is supported entirely out of electric revenue. In fact, the power program pays annual dividends to the Treasury to repay the federal government's initial investment in TVA's power system.

TVA's power program, of which we are proud to be an important part, has grown as it has in large part because the federal government provided TVA and the 8 million residents of the Valley the resources necessary to promote human and economic development. TVA's agricultural development program took a region beset by erosion and subsistence farming and helped it develop into a modern farm economy that could take advantage of the argicultural tools that electricity could power. TVA's economic development programs fueled business and industrial growth that could profitably use electricity made available by the power program. TVA's argicultural, natural resource, and economic development program have been and continue to be essential complements to the availability of abundant electric power.

The fulfillment of TVA's mission, as this body defined it some 52 years ago, requires your continued support for TVA's non-power programs. TVA must continue to have the resources

provided by the federal government to attack problems that, not addressed, will slow the recovery of the economies of the Valley states. Problems such as water quality management, aquatic weed control, soil erosion control, job training, agricultural development, forestry management, and recreation development are essential to TVA's fulfillment of the requirements of its Congressional charter.

TVA's National Fertilizer Development Center at Muscle Shoals, Alabama, is a program that would be virtually eliminated if the proposed budget cuts were implemented. Over its life, TVA's fertilizer development program has assisted agricultural development within the Tennessee Valley, throughout the nation, and around the world. It is not an overstatement to conclude that elimination of this important program would have an adverse effect upon agriculture throughout the world.

Proponents of the requested budget cuts have contended that TVA's economic development mission has been fulfilled and that there is no continuing need for TVA programs to assist the Valley's economy. Although we are proud of the role that TVA has played in assisting the economic development of the Tennessee Valley, much remains to be done. Economic data for the TVA service area indicate levels of income less than 80 percent of the national average. Employment levels within the Valley are only now returning to levels of 1979, and two major metropolitan areas -- Memphis and Chattanooga -- still are below 1979 employment levels. Alabama and Mississippi, two major TVA-area states, have unemployment rates in excess of 10 percent, a level exceeded only by West Virginia. Economic dislocation in the region has led to a renewal of a disturbing trend of outmigration, after 20 years of net gains in regional population.

Other critics of the TVA programs have suggested that Valley residents should be required to rely upon the economic stimulation expected from general fiscal and tax policies. However, TVA's economists have projected that the TVA region only receives half of the economic benefit received by the nation as a whole from the recent tax cuts and related changes in federal fiscal policies. TVA programs promoting economic development should be expanded, not eliminated, to narrow this gap.

Finally, we believe that TVA has adequately answered suggestions that its programs duplicate programs of other federal agencies. TVA has reported that it has significantly expanded its cooperative relationships with other federal agencies sponsoring development programs in the Tennessee Valley. TVA has undertaken to coordinate the identification and availability of federal resources from all sources, whether federal, state, local, or private, permitting the Authority to multiply the impact of its development programs.

TVPPA participated in the 1982 hearings before the Senate Environment and Public Works Committee. TVPPA believes that the following excerpt from the Senate Committee's report accurately reports TVA's approach to the prudent management of its non-power program:

> TVA has made a concerted effort to refocus and shift their programs to take best advantage of limited resources. They continue to evaluate their programs to make them more responsive and most cost effective. They have increased the use of fees where possible to recover costs. They are transferring programs to the private sector and to other Federal and State agencies where appropriate. TVA has eliminated some programs on their own based on internal prioritization of needs. TVA's remaining economic and community development efforts will focus on the objective of promoting economic development through local initiative and self-reliance rather than continuing dependence on the Federal Government. TVA's remaining research and demonstration efforts are limited to high-risk

initiatives that have potential benefits to the Nation. TVA is accelerating transferral of programs in natural resources to the States or the private sector. Yet TVA must maintain the facilities and natural resources which have been entrusted to TVA's stewardship and adequate resources for this task must be maintained.

The municipal and cooperative distributors of TVA power feel that they are important partners with TVA in efforts within the Valley to develop a better standard of living for our citizens. TVA's role in the partnership would be crippled if it was deprived of the resources necessary to help manage our Valley's natural resources and to promote the human and economic resources necessary to the more complete development of our region.

We recognize and strongly support the need for the federal government to seek efficiency during this deficit crisis and for TVA to perform its necessary functions in the most efficient way possible. We request, however, that you avoid placing a greater deficit reduction burden upon TVA than is placed upon other federal agencies, and we request that you make available adequate financial resources to permit TVA's non-power programs to continue their historic role in the development of our region.

SUMMARY OF STATEMENT

Mr. COLLETE. The Tennessee Valley Public Power Association is a regional organization representing the 110 municipal electric systems and the 50 rural electric cooperatives that purchase electric power at wholesale from the Tennessee Valley Authority. These 160 distributors resell that power on a nonprofit basis to the 8 million people located in the seven Tennessee Valley States.

The distributors of TVA power are principally involved in TVA's power program, which is supported entirely out of electric revenue. In fact, the power program pays a $100 million dividend to the Treasury plus a repayment of $20 million on the Federal Government's initial investment in TVA's power program.

TVA's power program, of which we are proud to be an important part, has grown as it has because the Federal Government provided

TVA and the 8 million residents of the valley the resources necessary to promote human and economic development.

TVA's agricultural development program took a region beset by erosion and subsistence farming and helped it develop into a modern farm economy that could take advantage of the agricultural tools that electricity could power.

TVA's economic development programs fueled business and industrial growth that could profitably use electricity made available by the power program. TVA's agricultural, natural resource, and economic development programs have been and continue to be essential complements to the availability of abundant electric power.

The fulfillment of TVA's mission, as this body defined it some 52 years ago, requires your continued support for TVA's nonpower programs. TVA must continue to have the resources provided by the Federal Government to attack problems that, not addressed, will slow the recovery of the economies of the valley States. Problems such as water quality management, aquatic weed control soil erosion control, job training, agricultural development, forestry management, and recreation development are essential to TVA's fulfillment of the requirements of its congressional charter.

The municipal and cooperative distributors of TVA power feel that they are important partners with TVA in efforts within the valley to develop a better standard of living for our citizens. TVA's role in the partnership would be crippled if it was deprived of the resources necessary to help manage our valley's natural resources and to promote the human and economic resources necessary to the more complete development of our region.

We recognize and strongly support the need for the Federal Government to seek efficiency during this deficit crisis and for TVA to perform its necessary functions in the most efficient way possible. We request, however, that you avoid placing a greater deficit reduction burden upon TVA than is placed upon other Federal agencies, and we request that you make available adequate financial resources to permit TVA's nonpower programs to continue their historic role in the development of our region.

Thank you for your attention and consideration.

Senator SASSER. Thank you very much.

We will hear next from Mr. James Tucker, Deputy Commissioner of the Department of Local Government, Commonwealth of Kentucky.

STATEMENT OF JAMES TUCKER, DEPUTY COMMISSIONER, KENTUCKY DEPARTMENT OF LOCAL GOVERNMENT

Mr. TUCKER. Thank you, Mr. Chairman.

Good morning. I am Jim Tucker, Deputy Commissioner, Kentucky Department of Local Government.

Thank you for the opportunity to be here today to share with you my perspective on the proposed reductions in the appropriated budget to the Tennessee Valley Authority. The impact of the budget reduction of this magnitude causes great concern.

TVA was created by an act of Congress to improve the economic and social well-being of valley residents. Historically, TVA programs in flood control, electric power, navigation, fertilizer and agricultural development, and natural resources have contributed to the achievement of this goal.

More recently, economic and community development programs have furthered this goal by raising per capita income, creating new jobs, and improving community viability. These programs are conducted in partnership with communities to reflect local values and priorities and deserve to be continued.

The proposed 71-percent reduction in TVA's budget request for fiscal year 1986 would eliminate a wide array of economic and natural resource programs which directly benefit minorities, although such programs are not specifically targeted toward such groups.

EMPLOYMENT IMPACT

For example, nearly 2,800 minorities would not participate in various TVA-sponsored skills training programs in fiscal year 1986 if adequate funding for TVA's congressionally appropriated program is not restored. This 71-percent cut in TVA's nonpower budget would also eliminate the minority economic development program which is specifically designed to help enhance employment and income-producing opportunities for minorities.

The proposed budget cut would also eliminate 3,000 TVA jobs, of which nearly 400 are held by minorities. The loss of 3,000 TVA jobs would trigger the loss of nearly 2,000 non-TVA jobs in the valley. A significant portion of the non-TVA jobs that would be affected also help the minority residents.

The 71-percent cut is completely unfair and violates the will of Congress requiring TVA to operate a regional development program financed by congressional appropriations. The reduction of appropriated funds to TVA to carry out these programs is unlikely to be offset by any increase to State or local entities.

The region will simply be a net loser when TVA's programs are eliminated. We are asking Congress to not cripple or take away a valuable tool such as TVA's community and economic development program from the 7.5 million Tennessee Valley citizens.

Thank you very much.

Senator SASSER. Thank you very much.

[The statement follows:]

STATEMENT OF JAMES H. TUCKER, DEPUTY COMMISSIONER, KENTUCKY DEPARTMENT OF LOCAL GOVERNMENT

Good morning, Mr. Chairman and members of the Committee. I am Jim Tucker, Deputy Commissioner of the Department of Local Government, Commonwealth of Kentucky.

Thank you for the opportunity to be here today to share with you my perspective on the proposed reductions in the appropriated budget to the Tennessee Valley Authority (TVA). Because of my interest in community and economic development, the impact of a budget reduction of this magnitude causes great concern.

TVA was created by an Act of Congress to improve the economic and social well-being of Valley residents. Historically, TVA programs in flood control, electric power, navigation, fertilizer and agricultural development, and natural resources have contributed to the achievement of this goal. More recently, economic and community development programs have furthered this goal by raising per capita income, creating new jobs, and improving community viability. These programs are conducted in partnership with communities to reflect local values and priorities, and deserve to be continued.

Despite these efforts to improve the economic well-being of every Valley resident, all of us, including TVA, recognize the fact that a substantial number of citizens remain socially and economically disadvantaged and have few opportunities to participate in the mainstream of the Valley's economy. The economic status of blacks and other disadvantaged persons in the TVA region consistently lags behind the economic status of white residents in the same area. Based on 1980 census data, for example:

1. The percentage of minorities in the Valley below the poverty level was twice that of whites.

2. Median income for black families was 64 percent of the level recorded for white families.

3. Black unemployment (12.8 percent) among the Valley's black population was almost twice the rate (6.8 percent) recorded for whites.

Since 1980 these figures have not changed significantly and the conditions they depict still exist in 1985.

The proposed $96.4 million reduction in TVA's congressionally appropriated budget for fiscal year 1986 would eliminate a wide array of economic and community development programs which directly benefit minorities although such programs are not specifically directed toward such groups. For example, nearly 2,800 minorities would not participate in various TVA-sponsored skills training programs in fiscal year 1986 if adequate funding for TVA's resource development programs is not provided. The loss of all these programs would also mean the loss of other benefits to minority entrepreneurs and communities which are not always quantifiable.

According to the latest economic forecasts, a 71 percent cut in TVA's nonpower funding would eliminate approximately 3,000 TVA jobs which in turn would trigger the loss of 2,000 non-TVA jobs. Of the 3,000 TVA jobs that would be lost, nearly 400 are held by minorities. Such a tremendous minority job loss would have a devastating multiplier effect on minority employment in a number of Valley businesses and industries.

The specific Minority Economic Development (MED) program which TVA established several years ago with an average annual funding level of $900,000 to help develop job-creating projects for minorities would also be eliminated, along with the hundreds of minority-held jobs previously mentioned. Incidentally, a $900,000 MED budget is extremely modest since it represents less than seven-tenths of one percent (0.7) of TVA's $135,000,000 request for fiscal year 1986. The elimination of TVA's MED program, which primarily provides technical and managerial assistance to minority entrepreneurs, would also have a negative impact upon a number of nonprofit minority economic development organizations, such as the Tennessee Valley Center in Memphis, the East Ninth Street Community Development Corporation in Chattanooga, and the Knoxville Opportunities Industrialization Center, which rely heavily upon TVA's technical data and expertise in carrying out their respective missions.

A 71 percent budget cut would, above all, mean that TVA would be unable to carry out its congressional mandate to help improve the quality of life of the citizens of the Tennessee Valley. The most tragic victims of such an outcome would be the Valley's minority community.

The reduction of appropriated funds to TVA to carry out these programs is unlikely to be offset by any increase to State or local entities. The citizens of the region will simply be a net loser when TVA's programs are eliminated. There is still a need for some government entity to provide technical and limited

financial assistance to minority and other disadvantaged business-persons and organizations in their quest to become a part of the mainstream of the Valley's economy.

I appreciate this opportunity to appear before the Committee, and I am available to answer any questions you may have.

Thank you.

SUMMARY

The economic status of minorities and other disadvantaged persons in the TVA region lags behind that of whites in the same area substantially.

The proposed 71 percent ($96.4 million) reduction in TVA's budget request ($135,000,000) for fiscal year 1986 would eliminate a wide array of economic and natural resource programs which directly benefit minorities, although such programs are not specially targeted toward such groups. For example, nearly 2,800 minorities would not participate in various TVA-sponsored skills training programs in FY 1986 if adequate funding for TVA's congressionally appropriated programs is not restored.

A 71 percent cut in TVA's nonpower budget would also eliminate the Minority Economic Development (MED) program which is specifically designed to help enhance employment and income-producing opportunities for minorities. Elimination of TVA's MED program, which primarily provides technical assistances to new and existing minority enterprises, would also have a negative impact on several minority nonprofit community economic development agencies in the Valley which rely heavily on TVA's technical expertise to execute their responsibilities.

The proposed budget cuts would also eliminate 3,000 TVA jobs of which nearly 400 are held by minorities. The loss of 3,000 TVA jobs would trigger the loss of nearly 2,000 non-TVA jobs in the Valley. A significant percentage of the non-TVA jobs that would be affected are also held by minority residents.

This 71 percent cut is completely unfair and violates the will of Congress requiring TVA to operate a regional development program financed by congressional appropriations. The reduction of appropriated funds to TVA to carry out these programs is unlikely to be offset by any increase to state or local entities. The region will simply be a net loser when TVA's programs are eliminated. We are asking Congress to not cripple or take away a valuable tool such as TVA's Community and Economic Development program, from the 7.5 million Tennessee Valley citizens, from the nations's poorest region economically.

STATEMENT OF G. WENDELL COMBS, SECRETARY, KENTUCKY TOURISM CABINET

Senator SASSER. Next, we will hear from Mr. Mike Miller—or why don't we just go right down the list.

Go right ahead.

Mr. COMBS. Good morning, Mr. Chairman and members of the committee. I am Wendell Combs, secretary of tourism for Kentucky. I oversee five State agencies that promote Kentucky as the travel destination and preserve Kentucky's natural attractions. Among the agencies in our cabinet are the department of parks and the department of fish and wildlife.

I thank you for the opportunity to be here today to offer my perspective of the proposed reduction of the Tennessee Valley Authority's budget. I will explain the national significance of TVA-managed recreation areas and detail the economic impact that will result if funding for this important tourism project is eliminated.

LAND BETWEEN THE LAKES

Excluded from this budget is funding for 50 public use facilities and 10 small wild areas in the seven TVA States, a Tourism Development Program of Land Between the Lakes, commonly known as LBL. Loss of any of these projects would be detrimental, but the closure of Land Between the Lakes would be devastating to the Kentucky tourism economy and the entire region's recreational opportunities.

It is important to note tourism is one of our Nation's fastest-growing industries. In Kentucky, it is our fourth largest industry, accounting for $2.28 billion annually. That figure reflects an increase of $700 million in 3 years.

Land Between the Lakes draws more visitors than any other attraction in Kentucky, but its influence is national, even international, in scope. Last year, 2.1 million visitors were recorded at LBL of people from all 50 States and even 20 foreign countries. Those visitors spent more than $45 million just in Kentucky. Tourism expenditures at LBL generated more than 2,000 jobs. The Federal Government has a huge investment in LBL.

TVA has spent $76 million to develop it. The State of Kentucky also has a big stake in LBL's success, having built three State resort parks around there, having a combined fixed asset value of more than $20 million.

We are very concerned about the future of those three parks should LBL lose its funding. If Land Between the Lakes closes, it is highly unlikely that another tourism attraction could replace it. LBL is the second contiguous parcel of Federal land in the East where only a small number of Federal acres are available for public use.

Land Between the Lakes is more than a recreation area; it was established as a national demonstration for recreation resource development and environmental education. LBL provides training in recreational resources management for professionals across the Nation. Integrated resource management makes it unique among Federal properties.

If funding for Land Between the Lakes is eliminated, other Federal agencies, more of which have single-use philosophies, would not be able to maintain the area as it is today. Keep in mind that 700,000 people who visited LBL last year hunted, fished, and observed wildlife. LBL also maintains educational facilities, such as the Homeplace 1850's, a living history farm similar to the working farm of the mid-19th century.

An example of LBL's wise wildlife management is a program that has established bald eagle nesting in the area.

To conclude, I would like to say Land Between the Lakes is a successful project under the able management of TVA. Elimination of funding would have a devastating effect on the economy of western Kentucky. It would be a loss to the entire Nation. I urge you to restore funding for Land Between the Lakes.

I do appreciate the opportunity to appear before this committee. Thank you, Senator.

Senator SASSER. Thank you very much, Mr. Secretary.

[The statement follows:]

Statement of G. Wendell Combs, Secretary of Kentucky Tourism Cabinet

SUMMARY

Elimination of TVA funding for Land Between the Lakes and other tourism facilities would have a devastating effect on the region's economy and on the area's tourism industry in particular. Tourism is one of the nation's fast-growing industries and is widely predicted to become the number one industry by the year 2000.

Land Between the Lakes, a national demonstration area located on a 170,000-acre peninsula in parts of Kentucky and Tennessee, is the region's most important tourism attraction. Land Between the Lakes draws visitors not only from the region, but from all 50 states and even foreign countries. Its national impact goes beyond its outstanding recreational opportunities. Part of Land Between the Lakes' mission is to train professionals in resource management for recreation areas. Last year, more than 400 students from 23 universities were trained in professional development programs. Land Between the Lakes' wildlife management programs also are of national significance. An example is its eagle hacking program that has helped establish the first eagle nest in the area in years.

In Kentucky alone, visitors to Land Between the Lakes last year spent more than $45 million. Those expenditures generated more than $3.1 million in state and local taxes. Land Between the Lakes generated more than 2,000 jobs in 1984. Its closure would result in the loss of 300 jobs directly, and would cause the loss of 1,800 more in a short time.

Much federal and state money has gone into the development of Land Between the Lakes and the lakes region in general. Through 1983, TVA had invested $76 million to develop Land Between the Lakes. About 200 Kentuckians relinquished their land for the project. Kentucky state government built three state resort parks in the lakes area. The combined fixed asset value of Kenlake, Lake Barkley, and Kentucky Dam Village is estimated at $20.5 million and their replacement value would be far higher. The three parks attract visitors from throughout the United States and foreign countries.

The states and Land Between the Lakes work cooperatively on a number of projects. For instance, Kentucky currently assists the area with law enforcement and wildlife management. In turn, Land Between the Lakes staff members have assisted the states with wildlife restoration programs. An example is a program to restore wild turkey populations to Kentucky and Tennessee.

Land Between the Lakes is the second largest contiguous parcel of federal land in the East, and is irreplaceable as a public-use recreational area. Land Between the Lakes' mission as a national demonstration in recreation, resource development and environmental education, makes it unique among federally held property. This mission is possible because of TVA's integrated resource management. Consequently, hunting, camping, attractions, wildlife management and environmental education exist side by side. It is doubtful another federal agency would maintain Land Between the Lakes as it is today.

In conclusion, Land Between the Lakes has been a successful project that makes a huge impact on the region's economy. TVA's other facilities and its tourism development program also are important to the region's tourism industry. I urge continued funding for Land Between the Lakes and other TVA tourism programs.

Good morning, Mr. Chairman and members of the Committee. I am Wendell Combs, Secretary of the Kentucky Tourism Cabinet. In that capacity, I oversee five state agencies which promote Kentucky as a travel destination and protect and preserve Kentucky's natural attractions. Among the agencies in the Kentucky Tourism Cabinet are our state park system and the Kentucky Department of Fish and Wildlife Resources.

Thank you for the opportunity to be here today to offer my perspective on the proposed reductions in the Tennessee Valley Authority budget. Because of my interest in economic development, in particular as it relates to tourism, I find the impact of these proposed cuts of great concern.

Let me begin by establishing the economic importance of tourism. Tourism is one of our nation's fastest growing industries. It is currently sustaining

a 4 percent real growth rate annually and is predicted by many to become our number one industry by the year 2000. In Kentucky, tourism is currently our fourth largest industry and is quickly gaining on other segments of our economy. Tourism accounted for $2.28 billion in total expenditures in Kentucky's economy in 1983.

Today, I will explain the national significance of TVA managed recreation areas and detail the economic impact that will result if funding for these important tourism projects is eliminated. Excluded from this budget is funding for 50 public use facilities and 10 small wild areas in the seven TVA states, a tourism development program, and Land Between the Lakes. Loss of any of these projects would be detrimental, but the closure of Land Between the Lakes would be devastating to Kentucky's tourism economy and to the entire nation's recreational opportunities. Land Between the Lakes is a national demonstration area. Located in the western Kentucky counties of Lyon and Trigg and Stewart County in Tennessee, it is a 170,000 acre peninsula between TVA's Kentucky Lake and the Corps of Engineers' Lake Barkley.

Let me now detail the national significance and economic impact of TVA managed recreation and explain why continued federal funding is required.

NATIONAL SCOPE OF LAND BETWEEN THE LAKES

Because Land Between the Lakes is primarily in western Kentucky, it has an enormous impact on the economy of that area. But Land Between the Lakes is by no means just a regional attraction. People from all 50 states and 20 foreign countries visited Land Between the Lakes in 1984 according to TVA visitor counts.

As a national demonstration area, a part of Land Between the Lakes' mission is to provide training to pre-professional and practicing professionals about resource management for a recreation area. These programs attract nation-wide participation and spread the impact of resource management techniques developed at Land Between the Lakes to recreational facilities throughout our nation. According to TVA reports, in 1984, 74 intern students from 40 universities were trained at Land Between the Lakes; over 400 students from 23 universities were trained in professional development programs; and professional development workshops were conducted for a number of groups such as the New York Department of Environmental Conservation, Arkansas Department of Parks and Tourism, and the Tennessee Department of Conservation.

In addition, wildlife management programs at Land Between the Lakes have national significance. For example, the bald eagle hacking program at Land Between the Lakes resulted in the first successful eagle nest in the area since the early 1940's. This effort, in cooperation with state, federal, and volunteer agencies, has had a positive impact on eagle restoration efforts in the south.

ECONOMIC IMPACT

Land Between the Lakes is the major attraction not only for the western part of the state, but for Kentucky as a whole. It draws more visitors annually than any other attraction in Kentucky. Last year, over 2.1 million visitors traveled to Land Between the Lakes and they made a contribution to Kentucky's economy of over $45 million.

Land Between the Lakes' tax impact further demonstrates its importance. The expenditures of the tourists to Land Between the Lakes generate over $3.1 million in annual state and local taxes within Kentucky.

This attraction is also a major contributor to employment in Kentucky. The expenditures of the tourists to Land Between the Lakes generated 2,022 jobs for Kentuckians in 1984. If Land Between the Lakes closes, 300 jobs will be lost with 1,800 more lost after a short period of time.

The Kentucky Tourism Cabinet conducted research to develop the above information. We developed an input-output model specifically for the Kentucky tourism industry and gathered data for this research through visitor surveys. These figures generally are conservative when compared with similar studies, such as those available through the U.S. Travel Data Service.

FEDERAL AND STATE INVESTMENT

Much federal and state money has gone into the development of Land Between the Lakes and the lakes region of Kentucky. Through 1983, TVA had invested $76 million into Land Between the Lakes development--$34 million for land acquisition, $42 million for facilities. About two hundred Kentucky citizens had to relinquish their land to allow for the development of Land Between the Lakes.

Also, Kentucky has invested in development in the lakes region adjacent to Land Between the Lakes. One of the benefits postulated in the original Land Between the Lakes concept was that the development of Land Between the Lakes would lead to development of the lakes region from outside interests. The Commonwealth of Kentucky prescribed to this philosophy and developed three state resort parks in the lakes area. With a combined fixed asset value estimated at $20.5 million and a much higher replacement value, these three Kentucky state parks, Kenlake, Lake Barkley, and Kentucky Dam Village, represent a major state investment in the Land Between the Lakes concept. These three parks serve visitors from throughout the United States and foreign countries. Nearly 46 percent of the overnight visitors resided outside Kentucky. These parks serve as a recreation resource for the nation as a whole, as well as for the residents of other countries. If Land Between the Lakes closes, the Commonwealth of Kentucky has concern about the future of these three resort parks.

STATE COOPERATION WITH TVA

The states provide support to TVA's management of Land Between the Lakes. Kentucky currently assists Land Between the Lakes with law enforcement and wildlife management.

In turn, Land Between the Lakes staff have assisted the states with wildlife restoration programs. The thriving turkey population at Land Between the Lakes is the source for statewide turkey restoration programs in both Kentucky and Tennessee. In addition, Land Between the Lakes staff worked cooperatively with officials from Kentucky's Department of Fish and Wildlife Resources to initiate a ruffed grouse restoration program. Other joint projects between TVA staff and Kentucky have included fisheries projects and the placement of lake brush attractors.

IRREPLACEABLE FEDERAL AREA

If Land Between the Lakes closes, another area of this significance would not be available to replace it. Land Between the Lakes is the second largest contiguous federal ownership east of the Mississippi River, and little federal acreage is available for public use in the eastern portion of the nation. Located within a day's drive of over 75 million people, Land Between the Lakes has an excellent location for a public use recreational facility.

TVA established Land Between the Lakes as a national demonstration in recreation, resource development and environmental education. That is a unique mission for a federally held property and is only possible because of the integrated resource management allowed by TVA's management of the area. Other federal lands do not presently have this scope of resource utilization.

INTEGRATED RESOURCE MANAGEMENT

In 1963, when President John F. Kennedy announced that TVA would develop Land Between the Lakes, he charged TVA with the mission to manage all the resources of the area to produce the most favorable possible environment for outdoor recreation. Land Between the Lakes, a national demonstration in recreation development, then also became an exercise in integrated resource management. This has lead to its development as an area where hunting, campgrounds, attractions, wildlife management, and environmental education all exist side by side under the management of a single agency.

If funding for Land Between the Lakes is eliminated under TVA's budget, other federal agencies, which have primarily single-use philosophies, would not be able to maintain Land Between the Lakes as it is today. For example, if the National Park Service were to manage Land Between the Lakes, hunting would be eliminated. Hunting, fishing, and wildlife enjoyment are responsible for a large percentage of the visitation at Land Between the Lakes. Total visitors in

these categories are estimated at about 700,000 each year. The expenditures by this group are estimated by TVA to be over $10 million annually. Land Between the Lakes currently has over 200 days a year open for hunting waterfowl, deer, turkeys, raccoons, quail, squirrel and other game species and recorded 250,000 hunter visits last year.

Similarly, it is unlikely that other federal agencies such as the Forest Service or Fish and Widlife could maintain Land Between the Lakes' broad spectrum of services which include such educational facilities as Homeplace 1850, a living-history farm similar to a working farm of the mid-19th century; Woodland Nature Center; Empire Farm, a contemporary living exhibition; and a planetarium.

OTHER TVA RECREATIONAL PROJECTS

Ten small, wild areas and 50 public use areas in the seven TVA states also fall under TVA management. TVA maintains camping and picnic facilities and protects unique environmental areas.

TVA also has a Tourism Development Program which provides local communities with assistance to plan and promote recreational development. Currently this program is helping with the development of recreational areas around the Tenn-Tombigbee Waterway and is working to attract three major resort developments to Mississippi. These are valuable services that cannot be obtained from another federal agency.

CONCLUSION

In conclusion, I would request that funding for TVA recreation projects continue. These are important tourism projects with effects beyond the seven TVA states.

As the primary recreation area, Land Between the Lakes demonstrates the success of the TVA tourism projects. TVA management has proved beneficial by providing integrated resource management and it is unlikely that another agency could maintain it as it is today or that a similar project could ever be developed in the eastern United States.

Elimination of funding for Land Between the Lakes would have a devastating effect upon the economy in western Kentucky. Kentucky has made a significant contribution to the recreational development of the area and can ill afford the destruction of over twenty years of progress.

Land Between the Lakes is a "national" project with visitors from all over the nation. A training program at Land Between the Lakes disseminates resource management techniques across the country. Closing Land Between the Lakes would result in a national loss.

I would like to urge that you continue funding Land Between the Lakes and other TVA recreational projects and maintain them in their present form under the able management of TVA.

I appreciate this opportunity to appear before the committee, and I will be happy to answer any questions you may have.

Thank you.

STATEMENT OF NICK CRISLER, PRESIDENT, TENNESSEE RIVER VALLEY ASSOCIATION

Mr. CRISLER. Mr. Chairman, I am Nick Crisler. I am plant manager of a chlor-alkali plant in Muscle Shoals, Ala., for the Diamond Shamrock Chemical Co.

I would like to point out in addition to all of the people testifying here today, we have also previously submitted a book of resolutions from area citizens pertaining to the Tennessee Valley Authority.

Senator SASSER. We have it here.

Mr. CRISLER. I am also president of the Tennessee River Valley Association, an organization of industry and civic leaders from throughout the 201 counties in seven States served by the Tennessee Valley Authority. I am here to testify in support of full and adequate funding for the programs of the TVA.

First, I would like to make a general observation. From my position in private industry, I certainly have a full appreciation of the essential role the private sector must play in the economy of our region and our Nation. At the same time, I recognize that the private sector is not always in a position or equipped to do some of the things that need to be done to stimulate economic development. This is where government enters the scene, and in my mind this is how the TVA operates. It steps in and helps. It fills the gap and provides a synergism that enables the region to move forward at a quickened pace.

Another way I view the TVA is it has a strong advantage in its geographical makeup. It can transcend State and county lines, taking the best here and there, working with local groups and organizations to tailor programs to fit specific needs.

Similarly, TVA's broad mandate permits pursuit of economic improvement through an array of avenues. It's efforts are not confined to agriculture or to river development or to the production of electricity but include all of these.

The broad access to clientele groups and unrestricted options for program formulation constitute a great asset to our region.

Mr. Chairman, I can testify that this approach has worked. But I also am here to testify that the job is not finished. There is much work to be done—by the TVA, by those of us in the private sector, and by all the citizens of the region. We need the resources to use as seed money to maintain or accelerate the pace of progress.

Mr. Chairman, I am talking about leadership in resource protection. The TVA has major program efforts in cooperation with many State and local agencies to protect and enhance our natural resources. It provides pioneering leadership in such areas as forestry, air quality improvement, water quality studies, acid rain research, and soil and water conservation.

Then there is the unique recreational demonstration of Land Between the Lakes. This laboratory combines recreation, environmental education and land stewardship, and serves the people in all 50 States.

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Mr. Chairman, I am talking about leadership in economic and community development. The TVA is a key in helping us make the kinds of transitions necessary to approach parity with the rest of the Nation.

Programs to nurture existing industries and cultivate new ones, foster navigation growth on the Tennessee River and on the newly opened Tennessee-Tombigbee Waterway, stimulate business formation, including minority-owned businesses, train or retrain workers for jobs of the future, and promote agricultural development. These and other programs need to be maintained and strengthened.

I cannot emphasize too strongly the importance of such efforts, particularly in my area, the northwest corner of Alabama. Even as the Nation is enjoying substantial economic recovery, we still have an unemployment rate of 15.3 percent. We need aggressive, collaborative pursuit of economic development. We need to continue to work together to upgrade and redirect many of our efforts. The TVA is a key resource in such an endeavor.

In addition, at Muscle Shoals, we have TVA's National Fertilizer Development Center. It truly is a national institution, one which positively impacts every one of us every day in terms of helping to provide quality food at reasonable prices. Beyond this, the results of its research are helping to feed the hungry in countries around the world.

FERTILIZER AND AGRICULTURAL PROGRAMS

Mr. Chairman, I believe the National Fertilizer Development Center deserves the full support of Congress. It is one of the most effective government R&D organizations I have known. Its technology is widely used by the private sector for the good of all. Failure to fully fund this vital organization would abruptly halt the flow of new technology and more efficient fertilizers that are so essential to competitive agriculture.

In the same vein, TVA's R&D program to develop more efficient technology for converting trees and agricultural wastes to liquid fuels should be continued. We need continued exploration of fuel alternatives, and this option for exploring renewable resources certainly should be pursued.

I thank you, Mr. Chairman, and members of the committee, for the opportunity to testify on behalf of the Tennessee Valley Authority. I urge you to lend your strong support to these TVA programs which are so important to the eocnomic development of our region and to the country.

Senator SASSER. Thank you very much.

We will now hear from Mr. Harry Martin.

STATEMENT OF HARRY MARTIN, EXECUTIVE DIRECTOR, COMMUNITY DEVELOPMENT FOUNDATION, TUPELO, MISS.

Mr. MARTIN. Mr. Chairman, I am Harry Martin, executive vice president of the Community Development Foundation of Tupelo, Miss. I am representing our 800-member foundation and the thousands of families in the northeastern region of our State served by the Tennessee Valley Authority.

Mississippi is the poorest State in the Union. I am here to stress the tremendous importance of allowing the Tennessee Valley Authority to continue its much-needed nonpower programs that aid the residents of Mississippi.

We can ill-afford the loss of resources and assistance that a drastic TVA budget cut would necessitate.

Jobs are the key to improving the Mississippi economy. TVA is helping us target growth areas and is the motivating factor in upgrading the skills level of our labor force.

Education is a priority concern in Mississippi. TVA works closely with our educational institutions, giving our children the opportunity to learn and to become productive citizens.

TVA is not giving us food; it is teaching us how to grow our own. TVA is not supplying us with jobs; it is assisting us in developing ways to create jobs. TVA is not training our unskilled labor force; it is teaching us how to train. We still need TVA's help.

Without TVA's continued assistance, I see drastic problems in the future, especially with technical skills training, agricultural production, and computer technology which are brought to our people through TVA's outstanding self-help programs.

On behalf of the small Mississippi farmer, the black Mississippi worker, the poor Mississippi laborer, and the struggling Mississippi small businessman, I urge you to give TVA its fair share to continue the programs that are so very vital to us.

If this drastic 71-percent budget cut takes place, the people of northeast Mississippi will be even further from the economic mainstream of the Nation.

Thank you for your time and for this opportunity to appear before you on behalf of the Tennessee Valley Authority and the people of Mississippi.

Senator SASSER. Thank you, Mr. Martin.

STATEMENT OF MIKE MILLER, PRESIDENT, ASSOCIATION OF TENNESSEE VALLEY COUNTIES

Senator SASSER. We will hear next from Mr. Mike Miller, president of the Association of Tennessee Valley Counties.

Mr. MILLER. Thank you, Senator Sasser.

It is a privilege to be here today to represent my county—Marshall County, Ky.—and also the Association of Tennessee Valley Counties, a group of counties that was organized in 1981 to improve communication and understanding between county governments and the TVA region and to enhance the effectiveness of TVA programs that apply to our counties.

ECONOMIC AND COMMUNITY DEVELOPMENT ACTIVITIES

Mr. Chairman, the proposed budget is an item of great concern to county and municipal governments across the 201 TVA service region. Since the information on the TVA budget was made available last

December, it has been my opportunity to discuss this issue with many of my counterparts from across the TVA region. To say the least, they were shocked to learn of such drastic reductions that were being proposed.

The consensus was that, directly or indirectly, every county and community in the TVA area would experience some degree of adverse effect and impact from the proposed cuts at such great magnitude.

We are also aware that the administration proposes and Congress disposes. That is why we are here today, Senator, in a unified effort and voice from across the valley to bring to your attention our concerns and wishes related to TVA's appropriated budget for fiscal years 1985–86.

It is our understanding that cuts of this size would mean a reduction in TVA personnel of over 2,000 employees who assist the local governments and the private sector in various economic development activities that translate into job opportunities. Most units of local government do not have the financial wherewithal to take up the slack.

Consequently, the region would experience not only layoffs by TVA but a reduction in jobs that are directly related to TVA's work, plus the jobs that would not be created because TVA's technical assistance in job development would no longer be available.

These situations may have other negative economic spinoffs. As you know, Senator, county governments have to depend very much on the property tax as a source of revenue. Some counties are pleased with their location and their ability to attract industry and expand their tax base. Yet, the more isolated rural counties have a difficult time competing for the tax base and jobs.

TVA with its appropriated funds often serves as a catalyst to encourage smaller units of government to work together to achieve common goals or purposes. It is obvious that soil erosion, flooding, air pollution, and air quality are problems that transcend municipal, county, and State boundaries. TVA, with its different kinds of technical skills, can bring together the data and people to help seek solutions and resolve problems that extend over local and State boundaries.

For the first time in TVA's history, county governments are now organized to better exchange ideas and views to develop programs with TVA. From our experience, TVA has been responsive in assisting county governments in a wide range of cost-saving services and programs.

We are aware, Senator Sasser, of the Federal deficit and the many problems that you face in trying to find solutions to so many problems. But your consideration is respectfully requested to help TVA and people of the TVA region in their efforts to move up on the economic scale and achieve a level closer to that of the rest of the Nation. We ask that you please restore TVA's appropriated budget to a fair and equitable level.

Thank you very much, Mr. Chairman.

Senator SASSER. Thank you, Mr. Miller.

[The statement follows:]

STATEMENT OF MIKE MILLER, COUNTY JUDGE, MARSHALL COUNTY, KY., ON BEHALF OF THE ASSOCIATION OF TENNESSEE VALLEY COUNTIES

SUMMARY OF ATTACHED STATEMENT

Mr. Chairman, I appreciate the opportunity to address the Subcommittee in reference to TVA's FY 1985-86 appropriated budget which is of great concern to the 201-county TVA region.

OMB is proposing to reduce TVA'S budget by 70 percent. County Judges/Executives in the region were shocked because such cuts would have some adverse impact across the valley.

We come before the Subcommittee for your support.

Such drastic cuts (70 percent) would result in negative economic ramifications in TVA and TVA directly and indirectly related employment.

County governments depend mostly on the property tax. TVA can assist the smaller counties with limited tax base to work together more efficiently. Many problems are not limited to jurisdictional boundaries.

The farm problem in the valley is not unlike the rest of the nation, TVA needs to continue to support the farmers of the Valley. Also, continue fertilizer programs.

Tourists are a source of economic stimulation and tax revenue for the TVA region. The Land Between The Lakes is vital as a tourist attraction.

TVA staff have worked with this Association very effectively in identifying two new priority programs that would benefit counties and be cost effective: Rural fire protection demonstration, and more cost effective computer operations.

Request Committee to help restore TVA's appropriated budget to a reasonable level.

MR. CHAIRMAN, I APPRECIATE THE OPPORTUNITY TO ADDRESS THE SUBCOMMITTEE ON SOME OF THE ISSUES CONCERNING THE TENNESSEE VALLEY AUTHORITY'S (TVA) 1985-86 APPROPRIATED BUDGET AS PROPOSED BY THE OFFICE OF MANAGEMENT AND BUDGET. THIS PROPOSED BUDGET IS AN ITEM OF GREAT CONCERN TO COUNTY AND MUNICIPAL GOVERNMENTS ACROSS THE 201-COUNTY TVA REGION WHICH INCLUDES ALL OF THE STATE OF TENNESSEE AND EXTENDS INTO THE ADJOINING STATES OF ALABAMA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, AND VIRGINIA.

IT IS MY UNDERSTANDING THAT THE OFFICE OF MANAGEMENT AND BUDGET (OMB) HAS PROPOSED TO CUT TVA'S APPROPRIATED BUDGET FOR FY 1985-86 BY SOME 70 PERCENT, FROM $135 MILLION TO $40 MILLION. SINCE THIS INFORMATION ON THE TVA BUDGET WAS MADE AVAILABLE IN LATE DECEMBER, IT HAS BEEN MY OPPORTUNITY TO DISCUSS THIS ISSUE

WITH MANY OF MY COUNTERPARTS FROM ACROSS THE TVA REGION; TO SAY THE LEAST, THEY WERE SHOCKED TO LEARN OF SUCH DRASTIC REDUCTIONS AS WERE BEING PROPOSED. OF COURSE, THEIR NEXT QUESTION WAS - WHAT CAN WE DO? FIRST WE FOUND OUT WHAT THE PROPOSED CUTS WERE AND HOW THEY WOULD AFFECT OUR COUNTY OR COUNTIES. THE GENERAL CONSENSUS BEING THAT DIRECTLY OR INDIRECTLY EVERY COUNTY AND/OR COMMUNITY IN THE TVA AREA WOULD EXPERIENCE SOME DEGREE OF ADVERSE IMPACT FROM PROPOSED CUTS OF SUCH MAGNITUDE.

WE ARE ALSO AWARE THAT THE ADMINISTRATION PROPOSES AND CONGRESS DISPOSES. THAT IS WHY WE ARE HERE TODAY IN A UNIFIED EFFORT AND VOICE FROM ACROSS THE VALLEY TO BRING TO YOUR ATTENTION OUR CONCERNS AND WISHES RELATED TO TVA'S APPROPRIATED BUDGET FOR FY 1985-86.

IT IS OUR UNDERSTANDINC THAT CUTS OF THIS SIZE (70 percent) WOULD MEAN A REDUCTION IN TVA PERSONNEL OF OVER 2000 EMPLOYEES WHO ASSIST THE LOCAL GOVERNMENTS AND THE PRIVATE SECTOR IN VARIOUS ECONOMIC DEVELOPMENT ACTIVITIES THAT TRANSLATE INTO JOB OPPORTUNITIES. MOST UNITS OF LOCAL GOVERNMENT DO NOT HAVE THE FINANCIAL WHERE-WITH-ALL TO TAKE UP THE SLACK. CONSENQUENTLY, THE REGION WOULD EXPERIENCE NOT ONLY LAY-OFFS BY TVA, BUT A REDUCTION IN JOBS THAT ARE DIRECTLY RELATED TO TVA'S WORK, IN FORESTRY, RECREATION, AGRICULTURE, ETC., PLUS THE JOBS THAT WOULD NOT BE CREATED BECAUSE TVA'S TECHNICAL ASSISTANCE IN JOB DEVELOPMENT IS NO LONGER AVAILABLE. THESE SITUATIONS MAY HAVE OTHER NEGATIVE ECONOMIC SPIN-OFFS SUCH AS HIGHER UNEMPLOYMENT, FAMILY SUPPORT PROGRAMS, AND REDUCED INCOME FOR TAX PURPOSES.

AS YOU KNOW COUNTY GOVERNMENTS HAVE TO DEPEND TOO MUCH ON THE PROPERTY TAX AS A SOURCE OF REVENUE. SOME COUNTIES ARE BLESSED WITH THEIR LOCATION AND ABILITY TO ATTRACT INDUSTRY AND EXPAND THE TAX BASE, YET, THE MORE ISOLATED RURAL COUNTIES HAVE A DIFFICULT TIME COMPETING FOR THE TAX BASE AND JOBS. TVA WITH ITS APPROPRIATED FUNDS OFTEN SERVES AS A CATALYST TO ENCOURGE SMALLER UNITS OF GOVERNMENT TO WORK TOGETHER TO ACHIEVE COMMON GOALS OR PURPOSES. IT IS OBVIOUS THAT SOIL EROSION, FLOODING, AIR POLLUTION, AND WATER QUALITY ARE PROBLEMS THAT TRANSCEND MUNICIPAL, COUNTY AND STATE BOUNDARIES. TVA WITH ITS DIFFERENT KINDS OF TECHNICAL AND PROFESSIONAL SKILLS CAN BRING TOGETHER THE DATA AND THE PEOPLE TO HELP SEEK SOLUTIONS AND RESOLVE PROBLEMS THAT EXTEND OVER STATE OR LOCAL LINES.

FARMERS ACROSS THE UNITED STATES ARE FACED WITH MANY CRITICAL PROBLEMS TODAY. THE SMALL FARMERS IN THE TVA REGION CONFRONT SIMILAR SITUATIONS. IF THEY ARE TO SURVIVE AS FARMERS, OFTEN THE ONLY LIFE THEY KNOW, THEY NEED ALL OF THE EXPERTISE AND TECHNICAL ASSISTANCE THAT TVA CAN PROVIDE, RATHER THAN A REDUCTION AS PROPOSED BY OMB, IN ADDITION, IT IS VITAL TO THE INTEREST OF OUR NATION'S

FARMERS THAT THE NATIONAL FERTILIZER DEMONSTRATION PROGRAM BE CONTINUED AT OR NEAR THE PRESENT LEVEL.

THE HYDRO-DAMS, THE LAKES, THE POWER PLANTS, AND THE LAND BETWEEN THE LAKES COMPLEMENT THE VALLEY REGION AND ITS MANY SCENIC, HISTORICAL, AND OTHER FEATURES THAT ATTRACT TOURISTS. THE LAND BETWEEN THE LAKES ATTRACTS 2 MILLION VISITORS A YEAR WHICH TRANSLATES INTO SOME 1600 JOBS FOR THE REGION THAT IS THE CENTER OF A $150 MILLION TOURIST INDUSTRY. THE TOURIST ACTIVITY IN THE VALLEY WILL BE FURTHER EXPANDED SINCE THE COMPLETION OF THE TENN-TOM WATERWAY PROJECT.

IN MARCH 1984, WE REQUESTED THAT THE TVA STAFF MEET WITH THIS ASSOCIATION'S BOARD OF DIRECTORS TO INFORM US ABOUT THE VARIOUS PROGRAMS AND SERVICES AVAILABLE TO LOCAL GOVERNMENTS, ESPECIALLY COUNTIES. THE STAFF TOLD US WHY THEY WERE WORKING ON A PARTICULAR ENDEAVOR AND WHAT IT WAS SUPPOSED TO ACCOMPLISH. SINCE THEN, THIS ASSOCIATION HAS MET WITH THE TVA BOARD AND FURNISHED IT A LIST OF OUR ASSOCIATION'S PRIORITIES FOR COUNTY GOVERNMENTS ACROSS THE VALLEY. IT HAS BEEN SUGGESTED TO TVA THAT COUNTY-WIDE RURAL FIRE PROTECTION DEMONSTRATION PROGRAMS BE ADDED AS A SERVICE, AND THAT ASSISTANCE BE MADE AVAILABLE TO COUNTY GOVERNMENTS IN BRINGING ABOUT MORE COST-EFFECTIVF COMPUTER SERVICES.

FOR THE FIRST TIME IN TVA'S HISTORY COUNTY GOVERNMENTS ARE NOW ORGANIZED TO BETTER EXCHANGE IDEAS AND VIEWS TO DEVELOP PROGRAMS WITH TVA. FROM OUR EXPERIENCE, TVA HAS BEEN RESPONSIVE IN ASSISTING COUNTY GOVERNMENTS IN A WIDE RANGE OF COST-SAVING SERVICES AND PROGRAMS.

WE ARE AWARE OF THE FEDERAL DEFICIT AND THE MANY PROBLEMS THAT YOU FACE IN TRYING TO FIND SOLUTIONS TO SO MANY PROBLEMS. YOUR CONSIDERATION IS RESPECTFULLY REQUESTED TO HELP THE TVA AND THE PEOPLE OF THE TVA REGION IN THEIR EFFORTS TO MOVE UP ON THE ECONOMIC SCALE AND ACHIEVE A LEVEL CLOSER TO THAT OF THE REST OF THE NATION. WOULD YOU PLEASE RESTORE TVA'S APPROPRIATED BUDGET TO A REALISTIC LEVEL?

MR. CHAIRMAN, THIS CONCLUDES MY FORMAL REMARKS. I THANK THE SUBCOMMITTEE FOR ALLOWING ME THE OPPORTUNITY TO APPEAR BEFORE YOU AND WOULD BE PLEASED TO ANSWER ANY QUESTIONS.

STATEMENT OF MARIE CIRILLO, DIRECTOR, APPALACHIAN COMMUNITY DEVELOPMENT, AND PRESIDENT, RURAL AMERICAN WOMEN

Senator SASSER. We will next hear from Marie Cirillo, president of Rural American Women.

Ms. CIRILLO. My name is Marie Cirillo. I am director of Appalachian Community Development, an agency that supports human, community, and economic initiatives of rural grassroots people in the coal fields of east Tennessee.

I will take these few minutes to elaborate on one of four points made in my written testimony about the impact of TVA on grassroots initiatives.

The power of TVA is in its vision. That vision has a heavy emphasis on ways that human and natural resources are developed compatibly. The sharing of that vision allows both professional bureaucrats and rural law leaders to forget differences as they form common bonds around the shared goal of working productively and responsibly with land.

Let me explain with an example. In a very remote area on the borders of eastern Kentucky and Tennessee there lies a place called the Clark Fork Valley. Within its mountain boundaries there are some 10 to 15 unincorporated communities and even more hollow communities. In their 18 years of rural organizing, local leaders have managed to sustain a commitment from TVA that has been rewarding for both.

While the people were building clinics, child care centers, houses, acquiring land, developing a cooperative college, managing a credit union, establishing a water utility, and building its social infrastructure, TVA was backing the efforts with mobile units as temporary facilities, with engineers, agriculturalists, timber specialists to train and contribute to the formulation of development plans, with funds to support necessary research, with surveyors and artists to provide technical assistance.

The thought of not going forward at this time—when TVA has 50 years' experience and rural community-based development organizations have 20 years of experience, when the rural environment is most damaged and the rural population in most need—is simply unthinkable.

At this time in history the problems and potential found in rural areas both at home and abroad now stand side by side in a way where the vision can be matched with commitment and creativity, where the experience can be matched with productivity and transferability.

I urge you to think hard before you do anything that might change this course.

Thank you.

Senator SASSER. Thank you very much.

[The statement follows:]

STATEMENT OF MARIE E. CIRILLO, DIRECTOR, APPALACHIAN COMMUNITY DEVELOPMENT

Congressmen, I am here to request adequate budget appropriations for rural development programs operating out of the TVA Office of Natural Resources and Community Development.

I would like to make four points about TVA's relevance to a vital constituency of the region, namely, the rural community that is conspicuously poor and conspicuously involved.

POINT I. The vision upon which TVA was conceived, the idealism of some of its early leaders, and the faithful living out of its mission has created for TVA an institution with outstanding ability to work with ease and effectiveness at the grassroots level.

A. My experience with TVA participation in grassroots development:

Since 1967 (some 18 years) I have been involved in a development work in a small area of East Tennessee that local people have named the Clear Fork Valley. It is the Clear Fork River that runs through some 10 to 15 depressed coal mining communities on the north side of Cumberland mountain in Campbell, Claiborne, and Whitley and Bell counties of Tennessee and Kentucky, respectively, that symbolize the unity that exists. The common problems of a single mining industry, its collapse, the out-migration and the environmental damages provoked a common interest in self-help development. Over this 18-year period, the people of the Clear Fork Valley have established three clinics, garden projects and emergency food centers, two housing groups, libraries and clothing centers, one child care center, craft center, water utility, adult education programs and summer camp; a land trust and a credit union. When seen in the context of a community, people in the Clear Fork Valley have deomonstrated the effectiveness of local initiatives in a poverty stricken rural area. TVA has worked with many of the organized non-profits in the Valley. They have stayed with us while we have matured. The community sustains its own vision--its own drives, while the continuity of TVA's services through various directors and various administrations tells me that it has passed some critical tests as far as being among the best government agencies to support local initiatives in development. TVA has leased mobile units to several groups at the time when they had no facility. TVA has provided engineering and planning experts to groups developing land. TVA has provided us with artists and photographers when the Valley needed to prepare a display to go to India for an International Exposition of Rural Development. All of this has been done with field workers. Now that TVA has a retiree volunteer association, they, too, have contributed to the field work expertise needed in the Clear Fork.

B. Going international with TVA:

Since the early 1970's, the Clear Fork has enjoyed its share of international visitors. They came either to see mining operations or to see grassroots organizing in a poverty stricken area of Appalachia. By 1983 we were recognized for our "cluster" approach to development. That is, a given geographic area with a multitude of grass roots efforts that are diversified but inter-connected. It was not until our community was chosen as one of 7 groups in the United States to attend an International Exposition on Rural Development in Delhi, India, that we became aware of the tremendous impact TVA philosophy, structure and approach has had on the international scene. We never told our story without telling of the role of TVA. If we were ever questioned about the role of government in our efforts, it was always TVA that we talked about. More often than not these comments would provoke a response about how this or that country has an agency built on the TVA model. We also came to discover that TVA staff were here or there. India itself was using TVA staff for some of their development activities. We came home very proud of ourselves and our government, and perceived that it was the legitimacy of TVA at the home front that merited them such success internationally. It was not set up to serve the world. Rather, it stands as an admission that the United States also has problems. We, too, have pockets of rural poverty. We, too, have unmet challenges in working with the natural and human resources of unique places and cultures. As TVA serves the world, from this vantage point there is little arrogance detected, little snobbery reflected and little competency lacking. There is enormous good will towards TVA in the

developing world. We heard this at the Exposition in India. We also saw it this summer when we hosted 40 grassroots rural community leaders from 22 nations. We asked TVA to help us. They explained to the visitors their role in supporting grassroots efforts. They called on their retired volunteers to bus the women, to answer questions, to provide information and anecdotes that made the visit to the United States a most insightful experience.

C. Internal dimension:

TVA has, over the years, been able to continually attract top notch people who are drawn to share their talents in the context of such an agency. This adds to the value of their 50-year history and contributes substantially to their ability to sustain the vision - to sustain the institutional memory. TVA, like many development agencies, can, with hindsight, reflect on where it has over-industrialized, overspent, gotten overinvolved. Like other development agencies it can question its role in leadership development, citizen participation, community development, rural/urban relations, and a host of other human and social questions that come from contemporary/professional approaches to development. The point is that TVA is old enough and confident enough in itself to learn from its history. In so far as "development," as such, is a relatively new activity of government, TVA is one of the better depositories of experience, evaluation and new knowledge. Furthermore, they are in a position to influence directions in this discipline throughout the world because of their internal and external workings, their structure and their philosophy. Leaders from various groups in the Clear Fork Valley have been meeting on a regular basis for the past 16 months with TVA staff in formulating a role that we both might have in promoting more activity within the rural poverty pockets of the Tennessee Valley. We have discovered the partnership between local self-help development efforts and regional development efforts has produced something very good, and we want it to spread.

POINT II: TVA has a philosophy and structure suitable to a democratic, participatory approach to rural development that is validated locally and accepted universally.

A. An integrated philosophy:

It believes development should make the best use of all available resources, while at the same time protecting and preserving them.

It believes natural and human resources are interdependent and the integration of these resources must be provided for.

It believes the beneficiaries of development, both public and private, must actively participate in the planning and execution of development in order to reach common goals.

It believes development planning processes must be self-generating at the grassroots level.

It believes costs of development should be shared equally by all parties.

B. A Field Structure:

It places highly skilled people in the real situation where local people are working for development. Skills and technologies are more likely to be applied appropriately when local leadership feels free to adjust the science to fit the natural condition.

Going out in the field allows professionals to get to know the people and the place, to develop trusting relationships between TVA and the community, to support, through TVA resources, the vision of local leadership, to insert ideas and perspectives within this atmosphere of trust that can lead to unified, comprehensive development.

Field Workers are free to work with citizen groups as well as local government and business agencies. This gives the poor access to TVA.

POINT III: Tools for development are to peace what weapons for deterrence are to war. TVA has a good handle on the basic tools to rural development. They know how to build a world where human and natural resources are developed

harmouniously. They know how to create an atmosphere where planning is done to include the interests of all parties. They know how to involve people in assuming the responsibilities as well as the rights to a better life. They know how to build partnerships. My experience from such a partnership is a living out of a peace model.

POINT IV: Our nation, in its own way, needs competency in the field of rural development. Our need for rural development seems minimal when compared to the needs in other countries. However, if we lose our knowledge, our contact, our awareness of this base of wealth - this root of development - we lose an essential part of ourselves, both as individuals and as a nation. Without this knowledge of our dependency on the earth's resources and on each other, our urban/industrialized/specialized world will crumble. TVA rural development activities are needed as much for our privileged people as for our underpriviliged people. If we lose the secrets of the earth's workings, we will soon lose an appropriate perspective for urban development. As a native of Brooklyn, N.Y., I have come to know how the full development of personhood must include a rural and urban experience.

CONCLUSION

Your best choice morally, politically and economically would be to sustain and even open up a greater potential for TVA to function at its best over the next decade. The agency is ideally situated among a people and within a place that has beauty, mystery, strength and hope. Government should be honored to have among its agencies one that can participate in this life. An investment in the Valley is an investment for peace.

ADDITIONAL PREPARED STATEMENTS

Senator SASSER. I understand that you have submitted other supporting additional statements and that others may also be submitted. All of those additional statements will be inserted into the record at this point.

[The statements follow:]

STATEMENT OF JOE W. MERRITT, PRESIDENT, TENNESSEE VALLEY TRADES AND LABOR COUNCIL

Mr. Chairman and Members of the Subcommittee:

I am pleased to have the opportunity to present the views of the Tennessee Valley Trades and Labor Council on the proposed fiscal year 1986 budget for TVA.

I am a General Vice President of the International Association of Bridge, Structural and Ornamental Ironworkers. I also am President of the Tennessee Valley Trades and Labor Council (Council). The Council is composed of 15 national and international unions representing over 14,000 TVA trades and labor hourly and annual employees. Since 1937, these employees have been represented, and since 1940 there has been a comprehensive written agreement, usually referred to as the General Agreement, between the Council and TVA. This agreement, as revised over the years, has established the framework for TVA's labor relations with its trades and labor employees and is among the oldest collective bargaining agreements in the Federal Government.

Despite my involvement with organized labor, it is important to understand a fundamental point: I am not asking that appropriations be made to TVA to preserve jobs with TVA for our members. In November 1980, TVA's total employment was about 53,250. As of January 1985, the figure was about 33,000. This reduction of over 20,000 TVA employees, approximately 38 percent of TVA's workforce, included nearly 17,000 of our members. As these figures indicate, we <u>have</u> already given enormously in lost jobs.

What I am saying is that TVA's appropriation-funded activities are cost effective and important to the social and economic welfare of the Valley and the Nation. These programs should be continued. In fact, the reasonable continued funding of these programs will improve rather than aggravate the current deficit problem. TVA's programs are designed to help the region make the best use of its own resources, primarily by providing technical and other forms of specialized assistance. By promoting the Valley's long-term economic development from the grassroots level, instead of simply throwing Federal funds at perceived problems, TVA's programs create real jobs for a relatively small investment. These programs actually reduce overall Federal spending in the long run by lowering unemployment and other drains on Federal, State, and local government assistance programs, while, at the same time, increasing the number of the Valley's productive and tax-paying citizens.

Among the effective TVA programs that should be continued are programs designed to improve existing industries, upgrade worker skills, retrain workers, and promote the overall economic development of the region. These activities are vitally needed. A representative sampling of some of these valuable programs includes the following:

<u>TVA Leadership in Workforce Development</u>

With TVA assistance, about 16,400 people were trained in 1984, and over 12,000 were placed in private sector jobs paying an average starting wage of $9 an hour. This will add about $121 million in annual wages to the region's economy and was undertaken in cooperation with State and local agencies, labor organizations, educational institutions, and the private sector.

Among those benefiting from TVA training activities were over 1,100 unemployed craftsmen who participated in a program to upgrade their work skills. Of these craftsmen, over 800 have been placed in new full-time craft positions at an average hourly rate of $13.50.

TVA has recently agreed to participate with the AFL-CIO Human Resource Development Institute (HRDI) in the creation of a training project for 300 unemployed and dislocated ironworkers, pipefitters, and electricians in north Alabama. This program is a unique partnership among a Federal agency, a State employment and training department, and labor which will provide retraining programs targeted on special and emerging skills that will be needed by workers in the future. In addition, TVA is also participating with HRDI in a project in Nashville to provide job training to 500 unemployed journeyman steamfitters, electricians, and ironworkers.

In cooperation with the State of Tennessee, Tennessee State University, private businesses, and other educational and governmental entities, an industrial training center in the north Nashville-Cockrill Bend area was established. The center will provide industry-specific and high technology training for new and expanding industries in the Cockrill Bend Industrial Park and surrounding area.

TVA is working with educational institutions and the public and private sectors to design and implement customized training programs in such high-tech areas as robotics and computer-assisted design. For example, in Chattanooga, TVA and the Chattanooga State Community College have created an automated manufacturing "Factory of the Future." As a result of this effort, two major Chattanooga industries (DuPont and Combustion Engineering), involving over 4,000 jobs, decided not to close their plants but to retrain employees in new skills at the school.

TVA Leadership in Encouraging Existing Industries

Over half of the new jobs created in the Valley during the past 15 years have been as the result of plant expansions. Responsive to this reality, TVA has created a unique program--its Existing Industries Program (EIP)--to expand existing industries and help strengthen local economies by providing more employment opportunities.

For example, in north Georgia, TVA has worked with 27 existing firms during the last two years, and the resulting plant expansions have created about 1,500 permanent new jobs. Part of TVA's assistance under the EIP included the payment of a training subsidy to help participating firms offset the cost of training new employees. An employer who agreed to create a new job, fill it with a long-term unemployed worker, and provide the new worker with on-the-job training, received $450 for each new employee trained and retained. The $450 per employee cost to TVA is usually less than what the unemployed worker would have received in unemployment benefits and other assistance during four weeks on the unemployment rolls. When unemployment compensation costs, other welfare costs, increased personal income for participants, and increased Federal, State, and local tax revenues are all taken into account, the benefit/cost ratio of this EIP program is 20 to 1.

During 1984, TVA's Existing Industries Program received 200 requests for technical and other assistance from 87 companies in eight target areas across the Valley that were considering proposed expansions. The actual expansions created nearly 2,500 jobs for Valley workers. Overall, TVA industrial assistance activities have resulted in an investment of about $152 million in Valley industries in 1984.

In fiscal year 1985 TVA's Existing Industries Program was expanded from eight target areas to cover the entire Valley region. Through the first four months of this fiscal year, this program has assisted 70 small- to medium-sized manufacturing firms in connection with proposed expansions, and these firms are creating over 3,800 new job opportunities for Valley residents.

TVA's enterprise development program assisted more than 600 small businesses in 1984--a program which meets the special needs of this portion of the private sector and which recognizes that small businesses tend to be labor intensive and are significant contributors to the creation of new jobs in the Valley.

TVA Leadership in Economic Development

In 1984, TVA provided assistance to over 150 communities in the Valley. These community development programs resulted in $45 million in public and private investment being spent.

TVA assistance to existing and new forest industries (the second largest employer in the Valley) was instrumental in the location or expansion of 18 forest industries representing an investment of $32 million, 920 new jobs, and the annual utilization of an additional 12 million cubic feet of hardwood.

TVA's Townlift program helps local communities improve their economies, attract new industries, and create new jobs. In 1984, Townlift planning and development assistance was provided to 68 Valley communities, and more than $25 million in private and public funds was spent to carry out Townlift recommendations. For every dollar that TVA spent in providing such technical assistance, more than $30 was attracted from the private sector and other public agencies.

TVA has helped areas like Greene County, Tennessee, in creating an economic development strategy that has resulted in 500 new jobs and $10 million in new local investment. TVA has also assisted Dover, Tennessee, in creating and carrying out a community improvement effort that has helped the community lower its unemployment rate from 42 percent in 1983 to under 16 percent in 1984.

Through its Special Opportunities Counties and Cities program (SOCC), TVA has worked with 26 counties and cities, 18 of which implemented new jobs creation projects in 1984, including the creation of 975 new jobs through 6 industrial development projects, 255 new jobs through 4 local industry expansion projects, 180 new jobs through agricultural and natural resource-based demonstrations, and about 300 new jobs through a special training program at the Beale Street redevelopment project in Memphis. In 1984, the SOCC program attracted over $5 million in new private investment and over $3.5 million of local funds was also invested. For example, Kemper County, Mississippi, was able to develop an industrial site which has attracted a new industry that will employ 400 people.

Taken collectively, these valuable programs address the Tennessee Valley's most pressing need which is the creation of jobs in the private sector. TVA's approach to providing real assistance to the region's working men and women has never been simply to throw money at the problem. Instead, its approach has been to serve as a catalyst with State and local governments, educational institutions, and labor and private enterprise to provide technical and other assistance and leadership to help Valley citizens help themselves. In my opinion, these efforts have been successful and are a viable alternative to the increased unemployment benefits and other forms of public assistance that would be required if such programs were curtailed.

I have, to this point, used examples of TVA programs which have led to and can continue to provide improved employment opportunities in the Valley region. The economic and social health of the Valley, of course, contributes to the overall national wealth. However, the long-term benefits of TVA's programs are not regional at all. For example, fertilizer is one of the most critical ingredients in this Nation's agricultural sector. About 40 percent of United States crop production is a direct result of the use of fertilizers, and the American farmer and the consumer are the direct beneficiaries of TVA's internationally recognized fertilizer research and development program. In fact, about three-fourths of the fertilizers made in the United States today are made with the aid of TVA-developed technology. This TVA-developed fertilizer technology has been one of the critical ingredients in our increasingly efficient and productive agricultural sector which permits American farmers to satisfy the Nation's food and fiber needs while still exporting up to $40 billion in agricultural products annually. High agricultural productivity creates jobs here at home in agricultural and agriculture-related industries and makes a positive contribution in international trade.

The TVA navigation system, a system of 38 multipurpose dams, reservoirs and associated lands, provides, in conjunction with the Tennessee-Tombigbee Waterway and other systems, much of the Nation with low-cost, water route access to coal, grain, and other bulk resources. Such access benefits those both within and without the region. This system of approximately 800 miles of navigable channels saves shippers an estimated $160 million annually, while TVA's flood control efforts, on the average, prevent another $140 million annually in flood damage. During May 1984 TVA conducted a major flood control operation which averted damages estimated at over $700 million. The TVA system also contributes to the control of downstream flooding on the Mississippi River.

TVA's Land Between The Lakes provides a unique facility that contributes to both the public and private sectors by testing innovative recreational, educational, and resource management programs. This facility is used and looked to nationally by colleges, State and local governments, and other Federal agencies for educational, recreational, and other management programs and activities that have practical applications in other parts of the country.

Mr. Chairman and Members of this Subcommittee, these are the facts. They argue forcefully in favor of the continuation of ongoing, productive TVA programs aimed directly at improving the Tennessee Valley's labor force and the region's and Nation's economic prospects. These programs will result in good private sector jobs. The facts offer no support whatsoever for the argument that TVA's development activities should be curtailed. To do so would simply aggravate the Valley's economic condition by increasing unemployment, directly and indirectly, and removing one of the more valuable tools that is contributing significantly to the region's economic progress.

I appreciate the Subcommittee's consideration of these views.

Statement of R. Neil Sampson, Executive Vice President, American Forestry Association

The American Forestry Association, one of the oldest citizen's conservation organizations in the country, is deeply distressed by the proposed elimination of the natural resource programs of the Tennessee Valley Authority. We thank you for the opportunity to submit a statement for the record in support of the innovative and cooperative research, management, and educational efforts of the TVA.

The TVA has a distinguished history of service to the people and the natural resources of the Valley, much of which has been due to the effective natural resource, economic and agricultural development programs of the agency. These programs often lead to the development of technologies, natural resource management techniques, and recreational and educational opportunities which benefit the entire country. To suggest that such programs are beyond their usefulness, or that there is no longer any need for them in the Valley, is shortsighted. Many of the resource and economic challenges with which the TVA has wrestled are now facing other regions of the country; TVA's cooperative, yet non-duplicative, interactive relationship with other federal and state agencies is a useful model for the nation.

We would like to highlight examples of TVA's contributions to the environment and natural resources of the region, and the nation as well. For convenience, we will group these efforts and accomplishments into the following general resource categories: forestry and agriculture; water; and environmental education and research, although specific programs obviously benefit many if not all of these broad areas. In addition, we would like to address the importance of Land Between the Lakes, which in many ways exemplifies the broad accomplishments of the agency.

Forestry and Agriculture. The science and practice of forestry has benefitted greatly, as has the region's economy, from TVA's reforestation and forest management research and leadership. Millions of trees were planted because of TVA education and outreach to private landowners. Those trees are now a major factor in the economy of the Valley. Today, the country as a whole faces the challenge of too many acres of marginal acres in crops. Currently, TVA, USDA, State Universities, and other organizations conduct cooperative soil and water conservation programs in the region. TVA's continued leadership, outreach and program support in conservation is needed in the coming years to address this crucial resource problem.

Water. TVA's effort to provide a water quality monitoring and trends assessment--to help TVA manage its reservoirs— provides information for State discharge permits, and acts as an early warning system for emerging water quality problems. TVA cooperates with States, and federal agencies such as the the Soil Conservation Service and the Environmental Protection Agency, to address non-point source pollution and toxic water contamination from surface mining, agriculture, livestock operations and other sources.

Research. TVA is taking significant steps to develop and implement pollution control technologies for its power plants, concepts which are appropriate for other power generators as well. TVA is also conducting important studies on the effects of air quality--specifically acid precipitation-- on soils, forests, fisheries, and water quality. If allowed to do so, TVA no doubt can continue to be an important cooperator in the effort to understand the causes and impacts of acid precipitation.

Environmental Education. In addition to the educational activities that it operates on its own lands, TVA has established a network of 11 cooperative centers at Valley universities that provide teacher training,

educational programs, research, and environmental study areas. This model for environmental education centers is now spreading to universities outside the Valley, and States as far away as North Dakota and Montana are working to establish similar programs.

The Land Between The Lakes. Land Between The Lakes provides a national demonstration in integrated natural resource management, providing wildlife, recreation, and education benefits. It receives visits from over two million people a year who come to hunt, fish, camp, observe wildlife, or just to "get away". These visitors leave with a renewed understanding and appreciation of their natural environment. Land Between The Lakes is a fitting symbol of the multipurpose, imaginative approach which is characteristic of the agency today.

The history of TVA is a proud one, and its work and future contributions are far from complete. Per capita income of this region still lags behind the national average, and national investments in the development and improved utilization of the region's resources, through a proven performer like TVA, are an important key to helping the region close the gap. Furthermore, TVA provides information and models of cooperation which can help combat resource problems at the national level.

We hope, as the Congress develops the 1986 budget, they will take the value of this organization, both to the region and to the Nation, into consideration. We have previously testified that AFA supports the concept of an across-the-board budget freeze that would hold programs at the 1985 levels. We think this is the best way to address the deficit problem without tearing gaping holes in the fabric of important natural resource programs that have been carefully developed over many years.

Statement of Janie Douglass, Executive Director, Volunteers for Flood Control

In 1977, we evacuated our new home as flood waters began to isolate us from dry ground and safety. Since that time, I've worked as a volunteer to determine what could be done to control the devastating floods that occur so frequently in Southeastern Kentucky. I've learned that there are a variety of land use, soil erosion and watershed programs that can be used to lessen the damages caused by such floods. What I find so disheartening now, is that all of these programs such as TVA, Soil Conservation Service (SCS) and Abandoned Mine Lands are falling under the budget ax. These types of preventative programs give so much more return - speaking both in terms of economics and stewardship of our natural resources, than do so many of the multi-million dollar large scale projects.

My first teacher/adviser/consultant was a planner in the Floodplain Management Branch of the Tennessee Valley Authority (TVA). Although not rightfully considered a part of the TVA service area since Harlan county is the headwaters of the Upper Cumberland River, the fact that we were interested in trying to help ourselves and have very serious flood problems was sufficient for TVA to provide us with answers to our many

questions about what we could do, where to start and how to go about obtaining help.

In our effort to work with state agencies to coordinate programs and policies, TVA was available to give us the benefit of their experience as well as tell us about other states and what they were doing. Through the technical assistance and support given us by such groups as TVA and the Water Resources Council (which I'm in hopes will be re-established in this Congress), a volunteer group working with state legislators passed legislation creating the Kentucky Flood Control Advisory Commission to provide a much needed element of cooperation and coordination between state agencies.

I find it hard to describe exactly how much the TVA Floodplain Management Branch has helped our efforts because so many of the results are intangibles. How do you quantify technical assistance? By so many man hours? By so many training products completed? By how many people impacted by a non-structural relocation solution where a dam or floodwall was not feasible? If so, TVA can certainly receive high marks in all of these areas for quality work.

However, TVA is so very important to me because the TVA philosophy made me realize that there is no one single answer to a given flood problem. It opened my mind to avenues other than the traditional, costly structural approaches that could not be considered cost beneficial in our area. We began to look for our solutions in preventative measures - controlled development in floodplains, sediment and erosion control from construction and mining, individual floodfighting efforts, timely evacuation and warning systems, etc.

None of these approaches are static. Like dams and floodwalls that need to be properly operated and maintained, so too the processes of flood plain management and erosion control need to be continuously monitored and adapted to community needs and priorities. For every community for which flood control structures provide the needed relief, there are as many or more where such projects would not work. In these communities, the Floodplain Management Branch programs have provided consistency and continuity to the practice of the flood plain management concepts. It provides the every day, real world assistance through flood hazard studies which result in identifying hazard areas, computerized flood information managment system which results in an accurate, up-to-date assessment for wise land use/hazard area planning, model ordinances and regulations and other technical support which results in the tools necessary to provide the framework. Without this kind of assistance, local communities could not implement an effective program to regulate floodplain development and thus reduce the damages associated with flooding.

TVA is one of the few government agencies that recognizes that there is a need for solutions to flood problems at the local level and provides the kind of assistance and support that locals need to accomplish an effective program. TVA has been and continues to be a leader in the nation where flood damages to property continues to increase (over $2 billion dollars per year) and development pressures continue to place more and more structures at risk - not to mention the lives at risk. It is

estimated that on the average, 200 lives are lost each year due to flooding. To eliminate the Floodplain Management Branch of TVA would eliminate an opportunity to demonstrate to the more than 20,000 flood-prone communities in the nation what has been learned and how past experience can be built upon to reduce the threat of flooding.

Thank you for considering my comments. Is it too late to have my comments included in the written record of the TVA hearing? I know there are many factors which must be weighted regarding the budget but I hope that you can maintain the Floodplain Management Branch of the Tennessee Valley Authority at its present level of funding.

Statement of Soil Conservation Society of America

This is in response to your letter of March 18,1985 to the Executive Vice President of the Soil Conservation Society of America(SCSA).You advised that we could file a written statement.SCSA,since formation in 1945,has been dedicated to advance the science and art of good land use. Our organization joins others,in expressing dismay at the proposed elimination of natural resource programs for(TVA)-Tennessee Valley Authority.We appreciate the opportunity to simply state that SCSA supports the possibility of all programs having to accept an across-the board freeze that would hold activities at the FY 1985 level.We would even support a reasonable reduction of federal spending,provided these reductions are really spread evenly across all agencies.

Now,as we examine the proposals for TVA,the natural resource functions for water resources,land and forest resources,and Land Between The Lakes,appear to be completely eliminated.This is a pattern we have noted for comparable programs for soil,water and watershed programs of U.S.D.A. This is most unfortunate,because cooperative work of several federal,state and local agencies are now producing substantial gains in the reduction of serious soil erosion and the improvement of water quality in the Valley.These advances will suffer a drastic setback,if proposed budgets are not changed by the Congress.We urge that you seek resolution of the budget deficit crisis in a manner that does not produce irreparable harm to the fabric of natural resource programs and the network of cooperative effort now in place.Thank you.

STATEMENT OF THOMAS M. FRANKLIN, FIELD DIRECTOR, THE WILDLIFE SOCIETY

The Wildlife Society appreciates the opportunity to comment on needed support for the important natural resource programs and projects of the Tennessee Valley Authority (TVA). The Wildlife Society is a nonprofit, scientific and educational organization dedicated to sound management and conservation of the world's wildlife resources. The Society's membership of nearly 8,000 is comprised of professionals working actively in wildlife research, education, communication, law enforcement, management, and administration. Our principal objectives are: to develop and promote sound stewardship of wildlife resources and of the environments upon which wildlife and humans depend; to undertake an active role in preventing human-induced environmental degradation; to increase awareness and appreciation of wildlife values; and to seek the highest standards in all activities of the wildlife profession.

The FY 1986 budget presented by the President calls for a 70 percent cut in the appropriated budget of the Tennessee Valley Authority. The appropriated TVA budget pays for the non-power TVA programs. The power rates paid by consumers of TVA electric power are used only for the power program.

Within the non-power programs, we wish to address the natural resource programs that are conducted with funds approved and appropriated by Congress. These tax dollars promote economic growth and jobs, natural resource development, and environmental protection and improvement in the TVA region and the Nation.

Recognizing that environmental quality is the prerequisite to a healthy economy, TVA's programs are aimed at protecting the environment and enhancing the natural resources of the Valley to provide a base for economic growth and development.

TVA is trying to take an integrated approach to conserving and using the natural resources to improve the social and economic life of the citizens of the Valley. In doing this, they frequently develop approaches and technology that apply to similar problems outside the Valley--and these become demonstrations of national significance.

The proposed 70 percent budget cut would eliminate most of these TVA natural resources programs. These programs do not involve large operations, construction projects, or Federal grants. Instead, these programs have relatively small budgets and staffs. They focus on improving and safeguarding environmental quality in the Tennessee Valley and managing TVA lands for multiple-use benefits for the American public, while providing technical and other help to State and local governments, businesses, farmers, and landowners. They complement, not duplicate, programs of other agencies and groups.

To put this in perspective, the cost of these TVA programs is about one percent of total Federal spending on natural resources. This category of Federal spending is, in turn, only about one percent of the total Federal budget.

TVA's natural resources programs include such areas as fisheries and wildlife, forestry, recreation, environmental education, and air and water quality. These programs involve activities on 47 reservoirs, 300,000 acres of land surrounding these reservoirs, and the 170,000-acre Land Between The Lakes (LBL) national demonstration area. These program also involve cooperative demonstrations and studies with State and other Federal agencies and private groups throughout the Tennessee Valley States. These activities collectively contribute toward making the Tennessee Valley a better place for its citizens and visitors. Individually, many of these activities serve as national models for others to emulate.

All of these programs would be eliminated under the administration's budget proposal. We will not describe all of these programs and activities, but we would like to summarize the major programs that would be eliminated.

All forest and wildlife management activities for TVA reservoirs and the land surrounding these ares would cease or be severely curtailed. These activities include: the management, protection, and restoration of both endangered and native species; the development and implementation of habitat restoration procedures for coal surface mines, reservoir drawdown zones, transmission lines rights of way, and water-damaged bottomland hardwood stands; habitat development and manipulation to meet the requirements of a variety of wildlife species; hunting and wildlife observation opportunities; and the management of thousands of acres of forest land.

All TVA fisheries improvement efforts would be eliminated including: work to enhance reservoir fisheries habitat and increase commercial and sport fishing harvest through low-cost fish attractors and water level management; technical assistance for a wide variety of aquaculture programs; efforts to replace the trout fishery lost with the completion of Tellico dam; and efforts to improve the striped bass fishery in several reservoirs and restore white bass runs to the tributary streams.

Land Between the Lakes' full range of TVA natural resource programs would be eliminated. LBL was developed by TVA in the 1960's as a national demonstration in integrated natural resource management where outdoor recreation and environmental education are the main purposes.

LBL is a unique outdoor classroom and laboratory for pursuing outdoor recreation and environmental education activities. It serves not only as a vast outdoor recreation area for vacationers and visitors from all 50 states and 20 foreign countries, but also as a working model for other areas where natural resources are managed for people.

LBL is not a park or wilderness. Rather, it is an area where the resources are managed for use by people in pursuit of understanding and enjoyment of the out-of-doors. Integrated multiple-use is truly a working concept at LBL. Over the years, LBL has established itself in professional circles for its research and demonstrations. For example, it was named by the National Science Foundation in 1983 as a component of the National Experimental Ecological Reserve network. That means LBL is one of 96 sites and one (1) of only two (2) on a major reservoir, which have been targeted for long-term field research for scientific use. Research efforts range from eagle restoration and testing fish attractors to a forest management program that has attracted the eye of the United Nations.

LBL's training for professionals and students also is nationally and internationally acknowledged. LBL has hosted professionals from a variety of countries, sometimes for on-the-job training programs lasting as much as six months. More than 800 students have been hosted from over 100 universities across the U.S. as interns, and curriculum enrichment programs for thousands of others have been provided. The combination of public use, research, demonstrations, and training makes LBL an important national asset. LBL provides answers to environmental questions, tests innovative techniques, and provides leadership training in recreation, education, and natural resource management.

LBL receives over two million (2,000,000) visits per year. Since 1981, visitation has increased at an average annual rate of 8.2 percent. Resource management activities annually support some 400,000 visits for hunting and wildlife observation and 600,000 visits for sport fishing opportunities. Outdoor recreation supports some 650,000 activities, and over 350,000 visits are recorded for interpretive and educational opportunities.

In summary, the programs and projects of the Tennessee Valley Authority are of major benefit not only to the Tennessee Valley region but the entire Nation. In particular, TVA's natural resource efforts follow an integrated multiple-use concept and produce significant benefits with limited appropriated dollars. Such efforts are strongly supported by The Wildlife Society as a national demonstration of integrating natural resource management and economic development while enhancing the productivity of the natural resource base.

The Wildlife Society urges the subcommittee to recommend funding for TVA natural resource programs at the fiscal year 1985 level to ensure continuation of these important activities.

These comments have been coordinated with the Kentucky and Tennessee Chapters of The Wildlife Society. Thank you for the opportunity to present the views of wildlife professionals.

Please include this statement in the official hearing record.

STATEMENT OF JOE K. NEEL, DEPARTMENT OF BIOLOGY, UNIVERSITY OF NORTH DAKOTA

Recent events suggest that proposed reductions in appropriated funds for the Tennessee Valley Authority endager survival of its Water Quality Branch. If this group is disbanded it may well mean the end of organized effort to compile basic data on reservoirs and their effects on, and how they are affected by, watershed phenomena. Such data are very relevant to operation of existing reservoirs, both within and outside the TVA, and to construction and operational plans for new reservoirs. Reservoirs occupy prominent positions in most water resource developments and their modifications of water quality and stream beds are at times beneficial, and at time inimical, to established and desirable water uses. Activities now assigned to the TVA Water Quality Branch have resulted in accumulation, over 50 years, of information relevant to optimum utilization of impoundments in the TVA and other systems. They have also provided long term data on general watershed features that shed the light of history on some current problems, e. g., acid rain, water pollution, toxic materials, etc., that are now under study at the TVA and elsewhere.

Work of general as well as of specific relevance reported by the TVA Water Quality Branch during the last two years relates to (1) past and present water quality data in acid sensitive watersheds, (2) impact of reservoir releases on downstream water quality and uses, (3) trophic state evaluation of reservoirs, (4) groundwater assessment of the Tennessee Valley region, (5) effects of individual runoff events on reservoir water quality, (6) postimpoundment water quality, (7) urban runoff relationships to land use and groundwater resources, (8) improving reservoirs releases, and (9) water quality processes in reservoirs. Much of this information will aid efforts to enhance reservoir utilization in various watersheds.

Availability of ground and surface water supplies of adequate quality for general and specific uses is becoming more and more limited in the United States, and promises to become generally critical in the near future. Many ground water supplies will not be useful for decades due to their careless or deliberate contamination with degrading and toxic substances. Surface waters have the ability to recover more rapidly from various types of pollution, and reservoirs appear destined to become more and more important in supply of municipal and industrial water. Their involvement in this regard will likely overshadow their importance to other human activities. With this future ahead if seems that the United States can ill afford to phase out reservoir related research and it is urged that appropriations to the TVA be sufficient to allow the Water Qualtiy Branch to continue with at least some meaningful projects. Attrition resulting from abandonment of this unit would seriously slow necessary work in the future.

Statement of Page Rutnam Miller, Director, National Coordinating Committee for the Promotion of History

I am writing on behalf of the thirty-five historical and archival organizations that compose the National Coordinating Committee for the Promotion of History to request that the following written statement on the cultural resourcement mamagement program of TVA be attached to the record of the Subcommittee on Energy and Water Development's hearing on the FY'86 appropriation for TVA.

The Administration's proposed 70 percent cut in TVA's FY'86 appropriation would permanently erode TVA's natural and cultural resource responsibilities and essentially would turn the agency into little more than a utility. In addition to the loss of such programs as the forestry program, acid rain research efforts, and cooperative programs to check soil erosion in the Valley, the Administration's proposal calls for the elimination of the cultural resource management program.

Archaeological, architectural and historical resources are precious, non-renewable resources, as important in their own way to the fabric of our society as the forests and streams. TVA recognized the significance of these resources as early as 1933 when a team of archaeologists was hired to survey Norris Reservoir prior to inundation. Today TVA has a small staff of professional cultural resource managers funded largely through TVA's congressional budget line for the Conservation of Public Lands and Water. A cost efficient and environmentally effective process has been established for protecting the Valley's resources. A historical survey, which locates significant sites through a review of the literature, precedes the field investigations and thus reduces costly fieldwork. TVA's growing body of professional surveys and reports allow a more accurate prediction of the location and value of our cultural resources.

Equally important, TVA has begun to develop a picture of the Valley's past -- a picture that is not only valuable in understanding our cultural heritage but also essential to the process of wise land use decisions. Work is now underway on an innovative cultural resources investigation at Watts Bar Reservoir in eastern Tennessee. This project which includes the disciplines of archaeology, architecture and history promises to be a model for future cost effective research designs.

All of this work would come to an abrupt end if the Administration's proposed cuts are passed by Congress. Local historical societies, with their meager budgets, and state historic preservation offices, whose existence also is threatened by the Administration's proposals, will not be able to assume responsibility for this work. Yet, a legal -- and moral -- responsibility as mandated by the National Historic Preservation Act and other legislation requires that attention be given to our irreplaceable historic resources. At best, the result of these sharp budget cuts would be site by site investigations, which are ultimately more costly and less environmentally sensitive to our cultural heritage than maintaining the current, small cultural resource management program, which employs only one historian. At worst, cultural resources will be totally disregarded by TVA.

TVA's natural and cultural resource work has been part of the agency's legacy to the Tennessee Valley. I urge you to allow it to remain a part of the Valley's future by restoring the appropriations to the 1985 level.

Statement of Ellis K. Fields, President, American Chemical Society

The American Chemical Society (ACS), a nonprofit scientific and educational organization of more than 135,000 chemists and chemical engineers, supports the FY 1986 scientific research budget submitted by the Tennessee Valley Authority (TVA) to the Office of Management and Budget in the fall of 1984. The Society is concerned about the potential adverse impact of budget cuts being proposed by the Administration for TVA programs in FY 1986. Of particular concern is the effect major cuts would have on TVA's National Fertilizer Development Center (NFDC) in Muscle Shoals, Alabama.

As the primary source of new fertilizer technology in the U.S., the NFDC makes significant contributions to the Nation. First, by increasing agricultural efficiency, the NFDC ensures adequate supplies of food at reasonable cost. Second, by substantially increasing the productivity of an industry, the Center aides in reducing the international balance of payments through the export of up to $40 billion or more of farm products annually.

The NFDC represents a unique government-industry experience. NFDC programs embrace a wide range of chemical, agronomic, and engineering research and development. New, more efficient, and cost-effective fertilizer materials and improved processes for fertilizer manufacture are the end products of this research. The Center also works closely with the private sector to achieve transfer of promising technology to commercial operations. The fertilizer industry readily works with the NFDC, testing promising new technology, making additional refinements needed in scale-up to commercial operations, and committing the capital required for implementation. Although the benefits to the American people from a national fertilizer research, testing, and demonstration effort are substantial, these functions are too costly and impractical for individual private firms to undertake alone.

There are many indicators of the importance and value of fertilizer research. For example, it is estimated that forty percent or more of the gain in food production in the past four decades is due to greater use of improved fertilizers. Most of those fertilizers, along with better ways of making them, have come from NFDC.

The NFDC is recognized as the world's leading fertilizer research facility. The Center's researchers have obtained about 250 patents as a result of the fertilizer research program. Nonexclusive licenses have been granted for the use of these developments in nearly 600 plants in thirty-nine states.

Because of the many direct and indirect benefits of NFDC programs, it is difficult to calculate their full value to the U.S. economy. However, a recent NFDC study indicates a return of $20 for each dollar invested in research. NFDC research has led directly to:

- Manufacture of high-analysis fertilizers that are of superior quality and which each year save farmers more than $1 billion in freight costs (compared to the cost of transporting and applying low-analysis fertilizers).
- Production of fertilizers in granular, easy-to-use forms instead of dusty, powdery materials.
- Introduction of such fertilizer products as concentrated superphosphate, ammonium nitrate, high-analysis liquid and suspension fertilizers, diammonium phosphate, urea-ammonium phosphates, and others.
- Manufacture of both fluid and dry fertilizers by more energy-efficient methods.
- Introduction of innovative fertilizer marketing systems.
- Development of technology that conserves the resources used to make fertilizers and also protects the environment.

Research at NFDC also has had many spinoffs. For about ten years at the request of the Agency for International Development, NFDC supplied fertilizer technical expertise to help developing nations increase their food production capabilities. This activity led to the formation of a separate International Fertilizer Development Center located at Muscle Shoals for easy access to NFDC resources. Basic phosphate chemistry developed at NFDC has found important applications in both dental and medical fields. Recent work with coal gasification as an alternative to total reliance on natural gas for ammonia production also has had a significant impact on the chemical and energy industries.

The importance to the United States of maintaining strong fertilizer research capabilities cannot be overemphasized. Resource and energy situations are continually changing. So are farmers' specific plant nutrient needs. A strong and continuing research effort is required to be responsive to such changes--and to guarantee that the Nation will continue producing food for itself and others. Continued support for the Chemical Facilities and Fertilizer Technology Introduction programs at the NFDC is also imperative since the programs assure that the results of fertilizer research and development will be transferred to the private sector.

With no similar broad-based fertilizer effort elsewhere in the United States, or the world for that matter, any significant impairment of NFDC programs potentially constrains U.S. capability in an area in which its leadership is clearly established. Maintenance of this core research and technology transfer capability is essential as the costs to rebuild will be much more than the savings resulting from cutbacks in spending now.

Although our major focus has been on NFDC programs, the ACS is also concerned about the impact of proposed budget cuts on other TVA research programs of national importance. Among these are various environmental and natural resource enhancement efforts, such as biomass research, acid rain studies, air and water quality research, hazardous waste handling, and others. TVA uses its unique research capabilities in these areas to pursue its mission to develop and protect the valley's natural resources. In so doing, TVA is providing critical leadership, pointing the way for others across the Nation.

The American Chemical Society strongly urges your continued support of adequate funding of the NFDC and other scientific research TVA programs in FY 1986. We acknowledge and are grateful for over fifty years of Congressional support for the much needed programs of TVA and the NFDC. Reduction of this support would do irrevocable damage to some of the Nation's most effective and beneficial research efforts.

STATEMENT OF ROBERT J. MULLINS, DIRECTOR, LEGISLATIVE SERVICES, NATIONAL FARMERS UNION

On behalf of the members of the National Farmers Union, I am pleased to submit to you the recommendations of the Farmers Union relative to the FY 1986 appropriations for the Tennessee Valley Authority.. Our members recognize the importance that TVA has played in the economic and social development of the region which it serves. Additionally, we in the Farmers Union recognize that through TVA's National Fertilizer Development Center farmers and ranchers around the country and, literally, around the world have benefitted from the research and development carried on by the Center.

In his message to the Congress on April 10, 1933, President Franklin D. Roosevelt called for the creation of an agency "charged with the broadest duty of planning for the proper use, conservation and development of the natural resources of the Tennessee River drainage basin and its adjoining territory for the general social and economic welfare of the nation." TVA is an American success story, combining the best of public and private involvement in the development of the region. Yet, despite its successes and continued need, TVA is under attack by this Administration who proposes to "privatize" many of its functions. To us that reads "destroy the system." Recognizing this threat, the delegates to the recent annual convention of the National Farmers Union held March 3-6, in Phoenix, Arizona, adopted the following policy statement regarding TVA:

> "National Farmers Union strongly supports the continuation of TVA's historic role in providing power, promoting economic development and fertilizer development and transfer.
>
> "We strongly oppose the Administration's attempts to eliminate the agency's non-power programs and recommendations that TVA's power functions be sold to private interests."

Therefore, Mr. Chairman, National Farmers Union strongly urges the Committee to appropriate sufficient funds for TVA to carry out its legally mandated programs. Specifically, we support the agency's budget request of $135 million for FY 1986. We strongly recommend that the Committee reject the Administration's budget proposal of $38.6 million as it would severely curtail the effectiveness of the agency.

In addition to the action taken by the delegate body of the National Farmers Union, the Board of Directors of the National Farmers Union, meeting March 2, 1985, unanimously passed the following resolution concerning the Tennessee Valley Authority:

> "RESOLVED that the Tennessee Valley Authority serves as a national model in producing electric power and in promoting economic and community development, and
>
> "WHEREAS the Tennessee Valley Authority, National Fertilizer Development Center at Muscle Shoals, Alabama, is the Nation's only center for developing new and improved fertilizer technology for the benefit of American farmers and consumers, and
>
> "WHEREAS more than 75 percent of the fertilizers used in the U.S. were either created at the National Fertilizer Development Center or processes for their manufacture were improved, and

"WHEREAS TVA's development of high-analysis fertilizers and other significant developments save farmers and consumers hundreds of millions of dollars annually, and

"WHEREAS the fiscal 1986 budget recommended by the Office of Management and Budget for TVA virtually eliminates the agency's nonpower programs of economic development and fertilizer technology transfer, reduces funding for critically needed nitrogen research, and eliminates funding for essential phosphate research,

"BE IT THEREFORE RESOLVED, that the National Farmers Union expresses support of the programs of the TVA and urges that funding be made available to maintain the viability of these programs for the benefits of the Nation."

Mr. Chairman, we appreciate the opportunity to provide the Committee with our recommendations and urge your strong support for a program which has, as envisioned by President Roosevelt over fifty years ago, improved the lives of the people living in the region and benefitted the entire nation's economy as well.

Thank you.

STATEMENT OF W.D. THOMPSON, PRESIDENT, TVA RETIREES ASSOCIATION

In connection with the upcoming "Citizen Day" hearings on TVA's budget request for 1986, we wish to submit this letter for the record.

The 10,000 TVA retirees wish to register their great distress at the proposal of the Office of Management and Budget to eliminate the heart of TVA's economic development effort.

Over the years, TVA's programs to improve the economy, natural resources, and agriculture have become a fundamental tool that is bringing the region closer to the standard of living enjoyed elsewhere in the country. To cut off that effective source of assistance just as the people of the Valley had begun to hope for a better life is unjust.

The development of skills, job training, and job creation activities, implemented and promoted by TVA have produced major gains throughout the Valley. Towns and cities have learned how to better organize themselves so as to lure new industry and help existing firms to expand. These efforts create jobs. The agency's fertilizer development and introduction effort has accounted for 75 percent of the fertilizers now used across the Nation.

We who have spent the better part of our productive lives working at TVA as annual employees where we have seen these programs yield tangible results, must strongly oppose this decision. It cuts against the underlying goal of our Nation, which is <u>to help others help themselves</u>.

We believe TVA has demonstrated great efficiency in managing its appropriated funds. Nevertheless, we recognize the need for prudence in government spending and, therefore, recommend that the agency's appropriated funds in fiscal 1986 be frozen at 1985 levels.

The committee's support of this recommendation will be greatly appreciated.

STATEMENT OF TOM GREEN, NASHVILLE ELECTRIC SERVICE, REPRESENTING TENNESSEE RIVER VALLEY ASSOCIATION

TVA--

THE MISSION CONTINUES

TVA WAS CREATED MAY 18, 1933, AS A REGIONAL DEVELOPMENT AGENCY WITH A BROAD MANDATE FROM CONGRESS TO:

- X IMPROVE NAVIGATION ON THE TENNESSEE RIVER
- • CONTROL DESTRUCTIVE FLOODS
- • PRODUCE ELECTRIC POWER
- X PLAN FOR THE PROPER USE, CONSERVATION, AND DEVELOPMENT OF NATURAL RESOURCES
- X PROVIDE FOR AGRICULTURAL AND INDUSTRIAL DEVELOPMENT
- X PROMOTE THE ECONOMIC AND SOCIAL WELL-BEING OF THE PEOPLE

NOTE: "X" INDICATES THESE MANDATED FUNCTIONS ARE PROPOSED OMB CUTS OR KILLS.

The "Joint Citizens for TVA Campaign" has been formed by the boards and the members of the six major regional organizations operating in the seven-state Tennessee Valley area. These are:

TRVA (Tennessee River Valley Association)
ATVC (Association of Tennessee Valley Counties)
TVPPA (Tennessee Valley Public Power Association)
TCWC (Tennessee-Cumberland Waterways Council)
TVIC (Tennessee Valley Industrial Committee)
Tennessee Valley Trades & Labor Council

State organizations from the principal TVA states of Alabama, Kentucky, Mississippi, and Tennessee include:

Chambers of Commerce (state and local)
City, County, and State Governments

Industrial Development Groups
Financial Institutions
Municipal Leagues
Power Distributors
Conservation League
Soil Conservation
Forestry
Farm Bureau
Environmental Organizations
News Media
Labor & Trade Unions (state and local)
League of Women Voters
Transportation Interests
Minority Opportunity Organizations
Professional Organizations and Individuals

VALLEY LEADERS PRESENTING TESTIMONY APRIL 1 BEFORE CONGRESS

The Honorable Richard Fulton
Mayor of Metropolitan Nashville and Davidson County, and
Chairman of the "Joint Citizens for TVA Campaign"
107 Metro Courthouse
Nashville, Tennessee 37201
Phone: 615-259-6047

Mr. Ray Azbell
President-Elect
Tennessee Valley Public Power Association
1231 Chestnut Street
Chattanooga, Tennessee 37401
Phone: 615-756-6511

Ms. Marie Cirillo
Appalachia Community Development, and
President of Rural American Women
Clairfield, Tennessee 37715
Phone: 615-784-6832
615-784-7039

Mr. G. Wendell Combs
Secretary of Tourism
Commonwealth of Kentucky
Capital Plaza Tower - Floor 24
Frankfort, Kentucky 40601
Phone: 502-564-4270

Mr. Nick Crisler
President
Tennessee River Valley Association
P.O. Box 1745
Decatur, Alabama 35602
Phone: 205-383-2551 (Diamond Shamrock, Muscle Shoals)

Mr. Harry Martin
Executive Director
Community Development Foundation
P.O. Drawer A
Tupelo, Mississippi 38802-1210
Phone: 601-842-4521

Mr. Mike Miller
President
Association of Tennessee Valley Counties
Marshall County Courthouse
Benton, Kentucky 42025
Phone: 502-527-1577

Mr. James H. Tucker
Assistant Director
Department of Local Government
Capital Plaza Tower
Frankfort, Kentucky 40601
Phone: 502-564-2382

MODEL RESOLUTION URGING FAIR BUDGET SHARE FOR TVA

WHEREAS, the Tennessee Valley Authority (TVA) provides a wide range of economic development and technical assistance services that are beneficial to the public and private sectors that, directly or indirectly, help to improve the quality of life of all the people in the United States, especially the residents of the 201-county TVA region in Alabama, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, and Virginia,

WHEREAS, the Federal Administration, Office of Management and Budget, proposes to reduce TVA's FY 1985-86 appropriated budget by 71 percent from $135 million to $38.6 million, a $96.4 million reduction, and

WHEREAS, a budget reduction in this amount will terminate or be extremely detrimental to TVA's programs in agriculture, fertilizer, farm demonstration, economic development (jobs), hazardous and solid waste management, soil erosion control, recreation, forestry, environmental education, downtown revitalization in small cities, and other specialized technical assistance services.

NOW THEREFORE, BE IT RESOLVED, by the undersigned, as so identified, that a 71 percent reduction in TVA's appropriated budget is considered to be unrealistic, and that any cuts in such budget should be kept in line with ot similar to other federal departments—a "Fair Share for TVA."

FURTHERMORE, BE IT RESOLVED, that copies of this resolution be sent to President Ronald Reagan, both of the U. S. Senators elected to serve our state, the Governor of our State, the U. S. Congressman elected to serve this District, and the local news media serving this community.

CAMPAIGN ACTIONS

In the January 1985 valley meetings of the regional organizations, a bipartisan Steering Committee was formed to take action. The Tennessee River Valley Association (TRVA) was named the coordinating organization.

The committee elected the Honorable Richard Fulton, Mayor of Metropolitan Nashville and Davidson County, as the Chairman of the Joint Citizens for TVA Campaign.

Actions taken or in progress are:

	ACTION	BY WHOM	TO WHOM
1.	Adopt Save TVA Resolution	All Cities, Counties, Civic Bodies	President Ronald Reagan; David Stockman, OMB; Your U.S. Senators; Your District Congressmen; Press
2.	Write Letters	Everybody!	Same as above
3.	Press Statements	State, Community Leaders	Radio, TV, Newspapers
4.	Organize Save TVA Campaign in all Counties, Cities	City, County Officials, Civic Leaders	The President, OMB, Senators, Congressmen, Press
5.	Speeches & Statements Civic Groups, Press	Local and Joint TVA Campaign Leaders	The President, OMB, Senators, Congressmen, Press, General Public
6.	Fund Campaign	Companies & Individuals	General Public
7.	Go to Washington for TVA Hearings, Visit Congressional Offices	Local and Joint TVA Campaign Leaders	Congressional Budget Committees, See Congressmen

BASIC FACTS TELL TVA'S SAD STORY

The President's federal budget for FY 1986 totally kills most of TVA's National and Tennessee Valley resource program (non-power), in operation for 52 years to increase productivity and upgrade living standards.

The massive cuts are a completely "unfair share," slashing TVA's money requests 71 percent, or $96.4 million, from $135 million to $38.6 million. However, since $25.9 million of the budget is for routine dam and reservoir operations, only $12.7 million remains for genuine resource programs; and $10 million of that is for fertilizer research.

These killing cuts violate the will of Congress expressed in the 1933 Acts requiring TVA to operate a regional development program flood control and navigation financed by congressional appropriations. In addition electric power is self-supported by ratepayers of the Valley.

AN UNFAIR SHARE FOR TVA
71 PERCENT BUDGET CUTS: TVA RESOURCE PROGRAMS
(in thousands)

	FY 1986		
	TVA REQUEST	PRESIDENT'S BUDGET	BUDGET CUTS
GRAND TOTAL	$135,000	$38,605	$96,400
I. Resource Development - Total	89,690	14,807	74,803
A. Totally Killed - Subtotal	65,661	-0-	65,661
Economic & Community Development	22,040	-0-	22,040
Land Between the Lakes Park	7,485	-0-	7,485
Land & Forest Resources	5,665	-0-	5,665
Agricultural Resources	5,730	-0-	5,730
Water Resources	6,951	-0-	6,951
Fertilizer: National Demonstration	17,275	-0-	17,275
Recreational Facilities, Other	515	-0-	515
B. Partially Killed - Subtotal	23,298	14,156	9,142
Fertilizer Research	16,400	10,000	6,400
General Facilities	2,567	1,475	1,090
Resource Development Support	3,600	1,950	1,650
C. General Services - Subtotal	731	731	-0-
II. RESOURCE MAINTENANCE - TOTAL	38,670	24,449	14,221
Reservoir Operation-Partially Killed	23,922	18,363	5,559
Dam Safety-Partially Killed	11,500	4,570	6,930
Other Dam-Reservoir-Partially Killed	3,248	1,516	1,732

WHAT IT DOES TO YOU!

Abandons the 7.5 million Tennessee Valley citizens in the nation's poorest region with conditions below the national average:

— Family incomes less than 80 percent
— Two of four major valley states (Alabama and Mississippi) have unemployment above ten percent
— Unemployment is 139,000 more than in 1979
— Only 40 to 50 percent as much fiscal stimulation from recent tax cuts and related fiscal changes as the rest of the nation
— The regional economy has been penalized by national economic policies relative to the rest of the U. S.--high interest rates, exports curbed by the strong dollar, etc.
— The recent damaged economy has caused the first population loss since 1960
— Force closure or sale of "Land between the Lakes" park by total cut in funding of $7.6 million. Why not "Yellowstone," "Yosemite" and other national parks!! Associated Press reported, "The 170,000 acre recreation area ...attracts millions of visitors. ...Losing LBL could have a devastating effect on the region's economy ... thousands of jobs are tied to tourism in the lakes area."
— Let them kill TVA's regional-national resource development and the remaining electric company part of TVA may be headed for "sale to the highest bidder."

STATEMENT OF DR. WILLIAM H. FUNK, PRESIDENT, NORTH AMERICAN LAKE MANAGEMENT SOCIETY

My name is William H. Funk and I am president of the North American Lake Management Society (NALMS), a national organization made up of citizens, scientists, lake associations, and water pollution control professionals who are concerned about restoration and protection of our nation's lakes and reservoirs. I am also director of the State of Washington Water Resources Center at Washington State University, and I have a research background in lake and reservoir management.

NALMS has testified before Mr. Boland's Subcommittee of the House Committee on Appropriations each of the last five years to support funding for programs of the U.S. Environmental Protection Agency (EPA) that affect lake and reservoir quality. This year, we find a need to testify before this subcommittee on the importance of programs of the Tennessee Valley Authority (TVA) in light of the devastating reductions in funding being proposed. We all agree that the Federal deficit must be reduced and that most government programs can be made more effective; but government should not turn its back on the needs of its citizens nor be short-sighted in its management and protection of our nation's vital water resources.

In my testimony, I want to stress several important messages of critical concern to this Subcommittee: (1) Thousands of lakes and reservoirs across the country — including those in the Tennessee Valley -- have been degraded in quality to the point that use is impaired and Federal appropriations for water projects are being jeopardized; (2) TVA has an important role to play in its region in restoring and protecting suitable water quality in its reservoirs as well as in protecting the Federal investment in the TVA reservoir system and the multiple benefits that accrue to the public; (3) The nation has much to learn from TVA's programs and policies which stress that regional economic progress and energy development are compatible with, and dependent on, the protection of good environmental quality; and (4) TVA and its region can serve as a unique proving ground or testing facility for innovative policies and programs in natural resource management and energy/economic development to maximize cost-effectiveness in expenditures of Federal appropriations.

DEGRADED QUALITY OF OUR NATION'S LAKES

During the last two years, the Society has presented testimony before the U.S. Senate and the U.S. House of Representatives on the worsening water quality situation in our nation's lakes and reservoirs. We conducted a survey for EPA of State water pollution in lakes. The States reported over 4,000 lakes and reservoirs with degraded quality impairing their use and over 9,000 experiencing excessive nutrient levels. Wisconsin, Massachusetts, Minnesota, Florida, Louisiana, and California head the list with many impaired lakes. Florida reported over 200 polluted lakes; Oklahoma indicated that 42 of its 43 reservoirs were impaired by pollution; and Tennessee said that 37 of its lakes and reservoirs were not meeting water quality standards — including many TVA reservoirs. Unaddressed nonpoint sources of pollution, excessive nutrient discharges, and unregulated discharges of toxic contaminants plague our nation's waters.

Despite the Clean Water Act, it seems that the situation is getting worse and that existing programs need to be redirected to place more emphasis on these unaddressed problems affecting lakes. In another survey conducted for EPA, the Association of State and Interstate Water Pollution Control Administrators found that four times more lake waters — over 1.6 million acres — have degraded in quality than improved in the period from 1972 to 1982 in the U.S. This is an alarming situation and one which warrants congressional action. Included in these degraded lake waters are Federal water projects constructed not only by TVA but also by the U.S. Army Corps of Engineers (CE), the Bureau of Reclamation, and the Soil Conservation Service. A study of CE found 71 reservoirs with toxic contaminants that exceeded EPA or FDA criteria as well as pollution from acid mine drainage, agriculture, and point sources. Recent reports of toxicity at the Kesterson project in California; the filling with sediment of the Dewey and Fishtrap projects in Kentucky; salinity in western reservoirs; and nutrient overenrichment in Pacific Northwest reservoirs such as Lower Granite, Brownlee, American Falls, and Potholes represent a threat to the public investment in water projects and a reduction in benefits to which the public is entitled. These problems are no different than the toxicity, eutrophication, sediment, and bacteriological problems existing in TVA reservoirs.

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WHY TVA?

The Society is here today to support funding for TVA programs because we have gotten to know TVA and its area the last 5 years. TVA staff have participated in national and international NALMS symposia by presenting technical papers and sponsoring entire sessions on TVA concerns and actions related to reservoir management. TVA helped the Society host its 1983 annual meeting and symposium in Knoxville and is sponsoring, along with EPA and the U.S. Department of Agriculture (USDA), a national conference on nonpoint source pollution being held this May in Kansas City. We have heard and read about TVA and want to share some of our knowledge with this Subcommittee.

THE 7-STATE AREA NEEDS TVA

From TVA publications such as "Is the Water Getting Cleaner," "State of the Environment in the Tennessee Valley - 1983," and TVA's "1983 Annual Report," the public can gain an appreciation of economic and environmental conditions in the 7-state area and the importance of TVA programs working to overcome the problems. It is clear that the TVA area is still poor; unemployment is high; and State/local governments cannot afford services we take for granted in other States. How can a county worry about effective septic tank installations or waste disposal when it can hardly afford to run its school buses? It appears from these publications that TVA programs are working to cope with regional waste management, regional water quality issues, and groundwater protection. It appears that these programs are trying to work with all units of government as a facilitator to help them help themselves. Everything from floodplain management and setting up recycling centers to working with local government to establish effective protection of municipal underground water supply recharge areas can fill a need of the people in the area — a need not met by other political entities because of lack of funding, lack of authority, or lack of political resolve.

The one thing that stands out is the regional nature of these TVA activities. Surface and groundwater resources do not respect political boundaries, and political entities do not often work well together. For proper management of surface and underground waters and for their effective protection, this regional or watershed approach is needed, as is the capability to get different political entities working together. Water resources management is not as effective as it should be in America, and this Subcommittee has a role in making it more effective for the good of the taxpayers.

One final reason for full funding of existing TVA land and water programs involves the impact of the vast reservoir system on environmental quality and the protection of the Federal investment in the reservoirs. TVA publications clearly show that pollution of TVA reservoirs and tributaries is a serious concern -- both from point source discharges as well as from poor land management practices which create nonpoint source discharges. Institutional impediments and lack of political resolve have resulted in this water quality damage. In addition, the creation of the dam system by the Federal government has resulted in some adverse changes in environmental quality. Full funding is needed for TVA to find solutions to the pollution problems, to ensure continued protection of the public investment in the reservoirs and benefits they provide, and to remedy problems caused by the reservoir (which include weeds, downstream water quality damage, restoration of fisheries and wildlife, and tributary flooding damage).

THE NATION NEEDS TVA

Several unique TVA efforts have come to our attention that could serve as models for the entire Nation in managing water resources and reservoir quality. Some of our members receive a newsletter out of TVA's Muscle Shoals office about a USDA-TVA cooperative agricultural land and water management program covering the entire TVA area. The objectives of the effort are proportedly to target cooperative local, State, and Federal initiatives to priority areas in the 7 states to stem soil erosion, increase agricultural productivity, and implement nonpoint source pollution control measures. This effort — if it achieves effective cooperation among many units of government — will be a milestone. But beyond this, it may result in cleaner reservoirs and may serve as a model for how the Nation should cost-effectively address nonpoint source pollution.

Another TVA activity involved preparation and implementation of water quality management plans for TVA reservoirs in cooperation with local and state governments. Just initiated several years ago according to a presentation made at a recent NALMS symposium, the process might be able to make up for gaps in institutions and lack of political resolve as well as to promote cooperation among political entities to achieve implementation of what is needed to restore and protect water quality in reservoirs. To our knowledge, TVA is the only water development agency to initiate this effort; and when coupled with their reservoir land management plans that stress nonpoint pollution control, this could promote an integrated land-water management framework to protect the taxpayers' investments in water projects and in public drinking water supplies.

One problem common to many water projects is that releases from dams may cause water quality problems for fisheries, drinking water supplies, and industries downstream of the dam. TVA publications say that this type of damage is caused below 17 of their dams and is common throughout the country. TVA efforts to solve these problems have been written up recently in the magazine Civil Engineering. TVA is using aerators in a lake and devices hooked to hydroelectric turbines to increase oxygen in dam releases and has constructed a reregulation weir at a project to provide minimum flow releases to restore environmental quality. Similar progress needs to be made across the country in addressing degraded water quality coming from dam releases.

Whether the issue is developing environmentally acceptable ways to manage weeds in reservoirs, developing new techniques for mitigating pollution caused by dam releases, or identifying the best areas for siting heavy industry so that environmental damage is minimized, it appears that the experience and outputs from TVA programs are valuable to the rest of the country. This knowledge must be disseminated and new challenges must be addressed. The Nation has a lot to learn from TVA -- not only from the results of its programs, but also from its policies. TVA publications seem to be stressing that the age of building is over; it is time to operate and maintain water resources projects to protect their viability, to generate additional public benefits, where possible, and to promote effective management and institutions to prevent future problems from occurring. There also seems to be another theme emerging. It is that economic and energy development is compatible with — and virtually dependent on — the maintenance of environmental quality objectives. It is time for the entire Nation to focus on cost-effective protection of public water projects and on a positive attitude in integrating economic and energy development objectives with environmental quality. The Society suggests that this Subcommittee learn more about TVA and the applicability of what TVA has found and what it is doing.

We also see another opportunity in TVA and its 7-State area that might be of interest to the Congress in developing and documenting the cost-effectiveness of Federal expenditures for natural and agricultural resources management. Parts of the Tennessee River Basin could be used as experimental or demonstration areas for developing and testing cost-effective solutions to pressing economic, energy, or environmental problems facing the Nation. Especially in regard to reservoir and water quality management, the cost effectiveness of existing Federal or State approaches could be determined and compared to new or innovative solutions. Once tested, these approaches could be incorporated through the appropriations process into other programs or could be the basis for national legislation.

NALMS is especially concerned about this issue because it does not appear that Federal programs conduct adequate follow-up to determine how effectively the taxpayers' money was spent. In times of fiscal constraint, a premium should be placed on developing more cost-effective management approaches, maintaining and preserving benefits of water projects currently built, and funding cost-effective programs first. Use TVA to develop, evaluate, or implement less costly solutions to reservoir pollution and water management problems; monitor the water quality effectiveness of the hundreds of millions of dollars being spent for erosion control in the USDA; determine the reductions in acid rain reaching lakes and reservoirs when certain air pollution control technology is installed. But most importantly, extend effective approaches for restoring and protecting the quality of lakes and reservoirs to other agencies having the responsibility to protect the taxpayers' investment in Federal water projects and public water supply reservoirs.

NALMS RECOMMENDATIONS

In his 1977 book entitled Regionalization of Water Resources, the eminent environmental engineer, Daniel Okun said, "The most admired regional effort in the United States is the Tennessee Valley Authority, Mecca for professionals from throughout the world...the most innovative and successful water-related regional agency in the U.S." If TVA is so highly thought of, and so successful, such drastic budget cuts are utter folly.

The Society recommends full funding for TVA's land and water-related programs. We do so not only because NALMS is convinced of TVA's utility but also for reasons of equity. The USACE, Bureau of Reclamation, and U.S. Geological Survey have not been scheduled for such budget cuts. It is not equitable for Congress to turn its back on citizens living in TVA's 7-State area while funding the water resources needs of citizens across the rest of the country. Everyone from the farmer, the sportsman, the tourist, the businessman, and the ordinary citizen will be hurt. But more importantly, from the NALMS perspective in advocating effective restoration and protection of lakes and reservoirs across the country, the entire Nation will be hurt by these unwarranted budget reductions. TVA seems to be extremely adept in combining small federal appropriations with funding from other sources, including its own power revenues and the private sector, to solve these complex environmental issues. The public is probably getting more for its tax dollars with TVA than with

any other agency. Our Nation's reservoirs are experiencing water quality and management problems stemming from the lack of funding for operation, maintenance, and management; the lack of political resolve to effectively run environmental protection programs; and the inability of governmental entities to work together in protecting water resources. The Congress needs to extend what has already been learned by TVA to the rest of the Nation and needs to use the TVA area to develop and test cost-effective solutions to pressing economic, energy, and environmental issues for application to the rest of the country.

With this in mind, NALMS recommends:

- Full funding for TVA's land and water-related programs and enhancement of activities related to reservoir quality management. This funding should be accompanied by a requirement for conducting technology transfer activities to relay the lessons learned to other organizations responsible for reservoir quality and water projects.
- Focus the efforts of TVA and other Federal water and land management agencies on the really pressing problems facing the agencies such as: reversing eutrophication of reservoirs, improving the quality of dam releases to meet Clean Water Act goals; abating nonpoint source pollution from Federal properties; siting environmentally acceptable hazardous waste treatment and disposal facilities; and treatment/removal of in-place accumulations of toxic substances in lakes and reservoirs that continue to pose public health and environmental threats.
- Utilize the TVA area as a proving ground to determine effectiveness of existing Federal programs and to develop more cost-effective solutions to economic, energy, and environmental problems as a way of making more efficient use of the Federal tax dollar.

STATEMENT OF JOHN M. BRADLEY, JR., PRESIDENT, RESOURCE MANAGEMENT SERVICE, INC.

I am writing this letter solely in respect to my personal knowledge and observations of what is now termed the Division of Land and Economic Resources (or prior predecessor names), of the Tennessee Valley Authority which I have known well to intimately for the past three and a half decades of practice as an independent private consulting professional forester.

In contrast to all other then existing State and Federal Conservation and/or Forestry agencies at the time of the commencement of my consulting practice immediately following graduation at Yale University in 1950, the TVA was the then sole agency that showed any known interest, recognition and even support of the newly emerging and struggling segment of our profession: the private self-supported forester practitioner.

This level, even if only modest support or recognition, was in stark contrast to what was then often quite aggressive direct competition and discouragement for the development of a private forestry practice to effectively serve the general public by the other known agencies who were offering or seeking to offer "competitive" services to the public without charge, at the taxpayer's expense. Regretably, many vestitages of such a philosophy and their programs still remain within certain geographic areas or pockets of certain agencies, but are thankfully greatly diminished.

I could submit a letter that would likely be closely similar to many other letters possibly written in support of the TVA's Division of Land and Economic Resources and their generally excellent and, by intent, efficacious forestry programs. These have generally emphaiszed the more appropriate educational, demonstrational or research type programs in contrast to service programs to do what most forest owners could better do by or have done for themselves.

While some of these programs have been more cost effective than others, I have generally observed that the least cost effective programs would be dropped without undue protracted delays due to "bureaucratic or job vested interests." In contrast I have enjoyed, in my judgment, a personal witness to the TVA's development of more progressive and innovative forestry programs from the public sector of probably any other agencies that I have known.

I had my first opportunity to formally comment upon this awareness before a US Senate Committee, chaired by then Senator Saltenstall back about 1953 during the early term of Esienhower's first administration when I was able to honestly comment, again related strictly to the TVA's Forestry Division, that they expressed an element of "creeping capitalism." This was in contrast to a well remembered preceding campaign comment of General Esienhower about the entire TVA agency which he then seemingly opted to terminate, describing it as "creeping socialism", but with an almost certain reference to other functions or activities of this agency at that time.

It is doubtful that hardly any other commentator has been in a more favorable position to observe and comment upon this almost peculiar and refreshing aspect of the TVA forestry program, irregardless of the reasons or to whom the credits should be due within TVA. Over the years I have had the opportunity to both observe and participate in their development of some of the most innovative and progressive ideas and concepts currently extant within the forestry environment insofar as any public agency participation or sponsorship.

More specifically, this has included first initiating and then sponsoring, with a thankful participation of the Association of Consulting Foresters, an exceptionally different and innovative program whereby, with carefully husbanded and very limited TVA funds, a critical element of fiscal support and incentive to help with the establishment of new consulting practices in areas without such "private sector assistance." This program undergirded a new private practitioner over his most difficult first two or three years while establishing his new practice.

A near dozen such type new practices have been established, (their latest newly established consultant being, by coincidence, in my office this moment), with a result that none have ever used their entire allocation of theoretical funds, ranging initially from $10,000 to perhaps a total of $25,000 at current program levels for their 2- to 3-year support contract. The result has been that a clear majority of these candidates are now successful, independent, and adequately established private practitioners, effectively serving the public without need of further public support at the taxpayer's cost.

One contrast and benefit of this type of innovative program has been that these types of foresters, serving public needs with a strong professional pride, motivation and profit potential, have been established by initial public seed funds for a limited period of time.

Yet their cumulative costs over an average actuarial term a relatively young candidate could be expected to serve throughout his professional life, would amount to a probable one-fiftieth, or less, of the comparative cost for a full-time and totally funded similar service agency forester probably without a near like comparative motivation over some 25 to 30 years of professional service to a community.

Another example would be TVA's current innovative and progressive concept and program of first conceptionalizing and then funding during its critical formative years a still relatively new Forestry Resources Systems Institute, or FORS. This program has recognized, early on, the tremendously potential value and impact that the new electronic microcomputer revolution may favorably offer the small to medium size forest product industry, including consultants, plus the smaller federal, state or decentralized agencies unable to justify the cost of main frame computer installations.

This new FORS Institute, through a subscribing membership now well into several hundred who are being served in every significant forested state and even several foreign entities, acts as an invaluable clearing house as to the tested applicability and cost effectiveness of a miriad of new microcomputer hardware and forestry useful or related software coming upon the market that has a direct and meaningful and sometimes powerful application potential for the profession of forestry and small to medium size forest industries. Within but a few years, due first the conceptionalizing, sponsorship, and supportive early grant funding of this FORS Institute, it will in very high probability soon be completely independent of public funding and a functioning tremendous success story.

It would be difficult for me to commend the past and present ongoing programs of this innovative and progressive natural resource agency whose very substantial contributions and "leadership influence" currently extends, direct and particularly indirectly, far beyond their regional boundaries. I could only wish all other agencies could be as wise and helpful stewards of the public funds.

CLOSING REMARKS

Senator SASSER. I want to express my profound thanks to all of you who have appeared here this morning to give us your views on the proposed budget cuts and how they will impact on the Tennessee Valley Authority and the Tennessee Valley region.

I think it is meaningful that we have heard testimony here today from officials of the Commonwealth of Kentucky, the State of Tennessee, and we have heard testimony from individuals representing organizations from Mississippi and Alabama.

I can say to all of you that I have discussed these proposed budget cuts with the Senators from your States, particularly Senator Heflin of Alabama, Senator Stennis of Mississippi, Senator Ford of Kentucky, and my colleague, Senator Gore, of Tennessee. We are all very much concerned and we intend to mount a united effort here in the Senate to see that the Tennessee Valley Authority is not unfairly discriminated against by this administration as it proposes what we consider to be draconian and excessive cuts in the budget of the Tennessee Valley Authority.

I think it is interesting today that we would have the Secretary of Tourism from the Commonwealth of Kentucky here telling us that these budget cuts will impact adversely on his State's effort to develop parks and to attract the very vital revenues that come with tourism.

We have before us today the distinguished mayor of one of the largest cities in the Southeastern United States, known far and wide as a very progressive mayor, who is telling us that these budget cuts would impact adversely on his city and on his region and on his efforts to uplift his city economically.

We hear from the State of Mississippi, which freely acknowledges that it is the poorest State in the Union, and says that it desperately needs to continue to avail itself not of the charity of the Tennessee Valley Authority but of the self-help programs that are made available to allow Mississippi to train its own people so that they can take their rightful role in the economic development of their State and their region.

We hear from a distinguished commissioner of the Commonwealth of Kentucky who tells us that these cuts would cost 3,000 jobs in the Tennessee Valley Authority itself directly, but equally as important it would deprive 400 of our minority citizens of jobs at a time when we are still struggling valiantly to spread the economic benefits of this whole great country along and across all sociological spectrums in our population.

We hear from Alabama that the cuts would dramatically curtail our efforts in fertilizer development. TVA has taken the lead now for almost half a century in developing new fertilizers and being on the cutting edge of these essential ingredients that have led not just to a green revolution here in the United States of America but have spread all across this globe.

I had the occasion just a few months ago in a conversation with the new Prime Minister of India, Mr. Gandhi, to talk about the enormous

agricultural advances that have been made in that country, a country where not too long ago their starvation was rampant, but because of U.S. technology and U.S. agricultural techniques and, yes, fertilizers developed in the United States by the Tennessee Valley Authority, this one of the most populous nations in the world is now able to sustain and feed itself.

So this is an important battle that we will be engaged in in the coming weeks and the coming months.

I want to express my gratitude to all of you for coming here to Washington today to give us the benefit of your views. I know that I speak also for the other Senators who represent the Tennessee Valley region. We are going to fight and fight hard to see that TVA is not unfairly discriminated against when we put together the budget for the coming fiscal year.

Ladies and gentlemen, thank you very much for appearing today.

[A brief recess was taken.]

COLUMBIA DAM, TENNESSEE

STATEMENT OF JUDGE TAYLOR RAYBURN, MAURY COUNTY, TENN.

ACCOMPANIED BY:

CLAYBOURNE ROSS, EXECUTIVE DIRECTOR, UPPER DUCK RIVER DEVELOPMENT AUTHORITY
JIM BAKER, MAYOR, COLUMBIA, TENN.
CONNIE CLARK, WILLIAMSON COUNTY, TENN.
WILLIAM CARROLL, GENERAL MANAGER, COLUMBIA POWER & WATER SYSTEMS
TERRY COOK, PRESIDENT, MAURY COUNTY CHAMBER OF COMMERCE
CLYDE BEARD, BOARD MEMBER, UPPER DUCK RIVER DEVELOPMENT AUTHORITY

Senator SASSER. Next we will hear from witnesses on the Columbia Dam project—Judge Taylor Rayburn, the distinguished county executive of Maury County, Tenn.

I would also like to acknowledge Mr. Claybourne Ross who is also here today. He has led the long and valiant battle to secure funding for the Columbia Dam.

I am delighted to see other interested citizens, both elected officials, legislators and lay persons, who come here to Washington to give this committee the benefit of their views relative to the Columbia Dam.

Please take your seats here. We will be delighted to hear from you.

Let me begin by saying that Judge Rayburn called this committee and requested that the proponents of the Columbia Dam be allowed to appear and testify in favor of the Columbia Dam project.

As I said earlier, the chairman of the full committee, Senator Hatfield, had indicated we were not going to have these hearings for outside witnesses from a number of different areas this year. But as far as the Columbia Dam is concerned, I am delighted that he has allowed us to do that.

It is always a pleasure for me to welcome Judge Rayburn before this committee, and Claybourne Ross and all of the proponents of the Columbia Dam.

As you know, Judge, and I think others here, I have always supported the completion of the Columbia Dam project. This was a project that was begun under the auspices of the late great Chairman Joe L. Evins when he was chairing the Public Works Appropriations Subcommittee in the House of Representatives. The project was underway at the time I arrived here in the U.S. Senate. I have supported it from the first day I got here and continue to do so.

As you know, the project is being held up because of the endangered mussel species which has been identified in the area. Now I understand that perhaps you have some new ideas with regard to the endangered species problem. I look forward to hearing your testimony on that subject today. I assure you that I will bring this testimony to the attention of Chairman Hatfield.

So, Judge Rayburn, why don't you take the lead here and designate who is going to speak, or perhaps you are going to speak for the entire group. We will split it up any way you want to do it. It is your option.

Judge RAYBURN. Thank you, Senator. I would like first to begin by saying that as a member of NICO, director of NICO, also as a member of the seven-State TVA board Mr. Miller is the chairman of, and as chairman of the Upper Duck River Development Group and the county executive, where the Columbia Dam is being built, I do echo and add a voice to the testimony we have just heard. We do support TVA in its efforts to get the $135 million appropriation and hope very strongly that they will obtain this. We feel it would be beneficial, as it always has been.

IMPORTANCE OF WATER

Within the time period of the next few months, the Congress of the United States will begin its intensive annual examination of water resources projects, what they cost and what they are worth to the Nation, its people, and its future.

This process has been going on for a very long while. In fact, one of the very earliest recognized purposes of government when this republic was just beginning was the development of the Nation's waterways. Works to utilize water for the benefit of the human race can trace their genesis back to the Book of that name which records the commandment given at the dawn of human history to subdue and replenish the earth.

Since the earliest days of recorded civilization, early man has marked his progress by erecting impoundments, digging canals and drainage ditches to make the fickle vagaries of nature sustain their lives and serve their ends.

These early ancestors of ours needed no formalized ratio of benefits to cost. They knew instinctively that water was life and lack of it could bring death.

Today, as then, it is man's most indispensable commodity and greatest useful servant. In today's world some well meaning activist group raises a public issue about some suspected hazard, then begins a loud clamor which sometimes brings claims that if a water project is built or one that is more than half finished is completed, great damage may ensue to the louse wart, the monkey-faced mussel, and the snail darter—all of little interest or usefulness to mankind and all of which could no doubt be effectively preserved by seining them and transferring them to another locality.

Trapped, harnassed, and directed by human intelligence, water runs our mills and grows our crops. It powers our machinery and lights our homes, cleanses our waste, and moves our commerce. Unharnassed and left to rampage, it can inundate our cities and our farms, destroy our homes and our hopes, afflict us with disease and death, and carry away to the seas the fertile topsoil upon which our civilization rests.

It seems ironic that almost alone among the works of our Government, the development of our water resources is required by law to meet the stern mathematical criteria of benefits-to-cost ratio. No such requirement is imposed upon the funds we spend for weapons, for highways, for schools, for welfare, or for foreign aid.

When a manifest need exists for efforts in any of these directions, we move without hesitancy to meet it. Yet none of these activities is more important to the future of man than the development of our water supplies.

David Burpee, the garden supplies producer, put the issue in sharp perspective. "People," he said, "are not really interested in my seed. They are interested in their lawns."

You know that we as a nation have always been better at criticizing something than at fixing it.

In the lobby of the New York Times Building in mid-Manhattan there is an inscription taken from a poem by Sarah Chauncey Woolsey, it reads: "Every day is a fresh beginning, each morn is the world made new."

Frankly, I can think of few subjects that would profit more from a fresh beginning than the interface among environmentalists, business, and the thousands of people who live in the upper Duck River area of Tennessee who have been working and fighting for more than 20 years for the completion of the Columbia Dam at Columbia, Tenn.

When I talked with some of my friends in business and plants, they shrug and ask: "Why should I get involved in this fight?" The answer is very simple: "Because it is your county that is and has been flooded for untold years and now is suffering a lower and lower water level. It is your people that are hauling more and more water from any source available to serve their needs, and it is your money that is being spent to cure these problems."

I do believe it to be presumptuous upon the part of any person or group of people to assume that they can perform a more enlightened

judgment than the judgment performed by Congress after the most exhaustive hearings and reviews, which in some cases have been in progress for 20 years and more. Some of these are projects upon which millions of dollars already have been spent, some with construction more than 90 percent completed—most certainly it would be folly to consider the gross wastefulness of simply abandoning these much-needed projects.

BENEFITS OF WATER RESOURCE DEVELOPMENT

On balance, water resources development has paid richer dividends than we have derived from almost any other activity of our Government. In looking at flood control alone, this Nation has invested some $10 billion in a system of more than 500 completed projects. Already these projects have prevented more than $60 billion to $70 billion in flood losses—more than seven times the amount invested in them.

Nor could we conclude that all or even most of the Nation's flood problems have been cured.

There are certain other human values to be considered: the development of potable water supplies for communties; wholesome outdoor recreation facilities for city-bound Americans; the preservation of the Nation's topsoil for future generations; the augmentation of low flows downstream to abate pollution in the dry seasons of the year.

It is hard to put a dollar sign on benefits like these.

Since the Nation began, the enlightened conservationists, those interested in a wholesome living environment for the human race, have been those in the forefront of developing our Nation's water resources.

In recent years, there has grown up a sort of faddish impression that the development of our water resources for people is somehow inimical to the natural environment since it sometimes disturbs existing habitat for various species of fish and wildlife.

We need to restore to our deliberations a modicum of common sense and we need to bear constantly in mind that the very highest cause of environmental concern is the human species and the need to preserve it from joining the list of endangered species.

Manifestly, when we provide pure water supplies for people, we improve the living environment.

When we save millions of families from having their life's savings and their life's dreams washed away by floods, we improve the living environment.

When we save the soil from wind and water erosion, we improve the living environment.

When we provide opportunities for wholesome outdoor recreation for millions of city-bound Americans, we improve the living environment.

Just as the positive benefits often are left out of environmental impact studies, so also are many valuable and measurable benefits often left out of our formal economic benefit studies.

If we looked only to cost, we would do nothing. America's cities would never have been built. Our factories would never have devel-

oped. The human services which flow to our disadvantaged would never have been undertaken. A school would never have been constructed. All scientific inquiry would have been stillborn, and our exploration of space would not have left the dreamer's drawing board. Columbus, in fact, would never have left Europe.

WATER USAGE AND SUPPLY

At the beginning of this century, America used some 40 billion gallons of water daily. Today our society uses more than 500 billion gallons. Water is our most useful servant. It is the one commodity for which there is no synthetic substitute and the one which man can never, ever do without.

There is enough water to serve our needs for future time only if we demonstrate the enlightened stewardship to use it and reuse it well. And there is enough time to do what we must, if we will only be about the task. But there isn't a great deal of either to spare.

Single-issue groups have discovered that it is relatively easy, with our legal system and a little militancy, to delay anything for a very long time. To be able to delay a program is often to be able to kill it.

INCREASED PROJECT COSTS

In the beginning, some 20 years ago, the projected cost of the Columbia Dam was approximately $58 million. The total project of the dam at Normandy and the dam at Columbia would include $16.2 million which the people of this area would pay on their water bills and return to the Federal Government. Some $5 million of this money is already on deposit and is being added to as we have promised.

The Honorable Mark Hatfield, chairman of the Senate Appropriations Committee in Washington, and a warm friend of ours, termed the Normandy-Columbia Dam project the best project he had seen during his many years of service. "This," he said, "was perhaps the first time in his memory that people of any area had gotten together with their Government and participated in the building of dams which were much needed."

It is my belief that we must recognize the fact that we, the people, must share a growing responsibility with Government for the attainment of public interest goals. We must reestablish our relations with Government on a basis of realism and mutual respect. We must face up to the task of educating the public to the hard choices that must be made if we are going to solve our national problems and regain our leadership in a world where capitalism and freedom still work.

If we can only turn our immense energies and resources to a fresh beginning in the management of social and economic change, we can make the coming years rewarding ones for all our citizens. I believe we can do just that. I believe for the future of our country we must do just that.

In 1983 we had a drought. In Maury and surrounding counties farmers saw their tobacco, their soybeans, their gardens and crops dry

up and were forced to sell their cattle for less than cost, a catastrophe of major proportions estimated at a loss of more than $8 million or $10 million in Maury County alone. It is our hope and prayer that this will never happen again. With your help, which you have so generously furnished in the past, it will not happen again.

My friends, and you have been our friends, you once gave us 91 votes in the Senate and 371 in the House of Representatives to build the Columbia Dam.

May God bless all of you who are our last hope in this great world, and we wish you the best of health and happiness in your awesome duties.

With respect and appreciation, we thank you.

Senator SASSER. Thank you very much, Judge Rayburn, for that very thoughtful and perceptive statement here this morning.

I might say that I will expect nothing else from you and from a person with the distinguished name of Rayburn. I was in Texas a few weeks ago, in Houston, standing there in a great room and looking out over the Houston skyline with a group of very prominent and distinguished Texans, powerful individuals all, and I just had to remind them that if it hadn't been for Tennessee, there wouldn't be any Texas, and the city that we were standing in was named for a great Tennessean, Sam Houston, and Davy Crockett had fought at the Alamo.

I told them something they didn't know, Judge. I said, "You know, we were even glad to send you our distinguished Tennesseean, Sam Rayburn, down here to Texas to look after you and then to serve in the House of Representatives as Speaker for many years." They were not aware that the Rayburn family was from Tennessee. I told them that Sam Rayburn left Tennessee as a young boy in a wagon back before the turn of the century.

You, Judge Rayburn, are a direct kinsman of Sam Rayburn. So, we expect nothing but an eloquent and perceptive statement and speech from you today.

Judge Rayburn, would you identify the other individuals at the table with you for purposes of the record? If they would like to make a statement, we would be delighted to hear from them.

Judge RAYBURN. Would you please identify yourselves for the record.

STATEMENT OF JIM BAKER

Mr. BAKER. I am Jim Baker, mayor of the city of Columbia.

Senator SASSER. Yes, sir. Please proceed.

Mr. BAKER. It is a pleasure to be here this morning. We appreciate all the help that you have given us in the past, the present, and the help you can give us in the future.

I don't think I can add much to what Judge Rayburn has stated this morning in his speech. I don't think we can talk too much about the importance of water—and water is the No. 1 priority for the Columbia Dam, in my estimation. It has been and will be the primary purpose.

I understand from last night that the Columbia Dam is a lot nearer completion than I had realized and a lot of other people had realized. I understand that the grouting has been completed and all it needs now is the earthen dam placed and then dam up the river.

I think this would be one of the greatest steps we could make if we could get water behind the dam. All of the other benefits, as far as I am concerned, are secondary. They are real important, but water supply is the No. 1 item.

I look forward to the day that I can see some water behind the dam. I think it is a terrible thing to see a structure out there with as many dollars being planted into it as there has been and yet we can't seem to get off center here and go on and put the earthen dam and dam up the water where we can see some water above the dam. The other things I feel like will come, will fall in place, if we can get some water behind the dam.

Senator SASSER. Thank you, Mayor.

WATER SUPPLY NEEDS

Ms. CLARK. I am Connie Clark from Franklin. I am joining the citizens from Maury County today representing officially Williamson County executive, Robert Bryan, and Jeffrey Dingham, president of the Williamson County Association and Public Water and Waste Water Systems, a voluntary organization of all retail water suppliers in Williamson County.

The Columbia Dam project offers water possibilities for citizens other than those in Maury County. Williamson County is the fastest growing county in the State of Tennessee. We need water. We, unfortunately, don't have an internal water source that meets our needs. We must look either to the north or to the south.

So, we join with the citizens of Maury County in knowing that the Columbia Dam will provide us a source of safe drinking water in the future.

Senator SASSER. Thank you very much.

STATEMENT OF WILLIAM CARROLL, GENERAL MANAGER, COLUMBIA POWER AND WATER SYSTEMS

Mr. CARROLL. Senator, I am William Carroll, general manager of the Columbia Power and Water Systems. I have a prepared statement. I would like to submit the whole thing and then read portions of it.

Senator SASSER. Your whole statement will be incorporated in the record as if read. You can summarize it if you wish.

[The statement follows:]

STATEMENT OF WILLIAM M. CARROLL, GENERAL MANAGER, COLUMBIA POWER AND WATER SYSTEMS

I am William M. Carroll, General Manager of the Columbia Power and Water Systems located in Columbia, Tennessee. Although both of these utility systems support the communities in the Columbia area, it's my responsibility to the Columbia Water System that brings me here to encourage completion of the Columbia Dam on the Duck River.

Of the many issues surrounding the Duck River Project, one stands out as the most important--water supply. As the individual charged with providing an abundant supply of high quality water for approximately 40,000 people, I have an intense concern about the future reliability of the water supply for the Columbia area. The Columbia Water System is a municipal system which filters and purifies water from the Duck River, and distributes it to our consumers. About 40% of the 2.8 billion gallons produced annually is consumed by residential users. Our average pump rate is just over 7.8 million gallons per day, while our peak day's demand stands at slightly over 10.6 million gallons. Customers of the Columbia Water System continue to demand greater quantities of water each year from the limited supply available in the Duck River. Since 1970 the total water needs of CWS customers has increased by 52%. Such increasing demand has caused many in our area to become genuinely worried about the long-term supply capacity of the Duck River. Can the Duck River, without the Columbia Dam, support continued economic growth in our part of Tennessee? The many thousands of people who depend upon this river do not think so.

Recent history supports our concerns. In 1980 and 1981, this area endured a sustained drought across the entire Duck River watershed. Records maintained by the Tennessee Valley Authority indicated that the water flowing to Columbia was almost totally supplied by releases from Normandy, the first reservoir built as part of the original Duck River Project. During this drought the demand for potable water, for industrial water, and for water to maintain stream quality drastically depleted Normandy Reservoir. Normal full pool is at an elevation of 875 feet above sea level. During part of 1980, and all of 1981, the level of water in Normandy Reservoir never exceeded 865 feet. The lake is normally operated above this level for eight and one-half months of each year. On November 26, 1981, the surface elevation was 853 feet, 22 feet below normal, and only 23 feet above the lowest discharge valve. That is far more serious than it may first seem, as the volume of water within the reservoir decreases dramatically as the surface elevation drops only a few feet.

For example, at normal full pool, the lake contains some 117,000 acre feet of water. But water below the 830 foot elevation, about 18,800 acre feet, is unusable because it is below the lowest discharge valve. Therefore, at normal full pool level of 875 feet, Normandy contains a usable volume of 98,200 acre feet. At the 865 foot level, that usable volume of water falls to 68,700 acre feet, a reduction of 31%. The November 26, 1981 level of 853 feet further reduced the usable volume of water to 35,200 acre feet, an additional reduction

of 49%. This left those depending upon the Duck River with a supply reservoir 64% lower than normal. That was more than enough to make us concerned about the future, especially when longer, more severe droughts have been recorded. Opponents of the Columbia Dam point to this drought as evidence that Normandy is adequate to meet all future water needs. We who rely upon the Duck River look to this drought as proof that Normandy alone cannot meet future needs as growing communities demand more water from the Duck River. There have been more serious droughts, and such droughts will occur again. They think that we survived the worst probable drought; we know that we barely avoided very serious water shortages.

Residents of our area support the completion of the Columbia Dam because we understand the need for a reliable, long-term supply of water. Our support is far more than verbal. The cities of Columbia, Lewisburg, Shelbyville, Tullahoma, and Manchester have contracted with the Tennessee Valley Authority to pay part of the cost of the Duck River Project. This payment of over sixteen million dollars will be made through the collection of five cents for every 1,000 gallons used by each consumer in those five cities. To date, more than five million dollars has been accumulated in a trust fund set up to meet our contractual obligations. Such commitment indicates solid support from those who will be affected by the dam. We realize its value, and are willing to pay for its benefits.

As everyone in this room well knows, the Duck River Project is not a new one; the need for controlling the Duck River has been apparent for years. TVA's Environmental Statement for the Duck River Project, dated April 28, 1972, expresses doubts about this area's long-term water supply. Page 27 of that statement notes that "Future industrial growth, therefore, is greatly dependant upon the availability of large quantities of water." Page 36 of the same report notes "Normandy Reservoir would support future requirements for water supply in Coffee and Bedford Counties. Marshall County, and to a much greater extent, Maury County would benefit from the impoundment of Columbia Reservoir."

This great benefit to Maury County is closer to completion than you might believe. All the concrete work has been completed, even to the point that the original river channel has been scraped down to bedrock and prepared as a base for the earth fill. Much of that future fill material is already on-site. The most difficult and expensive work has been done; concrete has been poured, gates have been placed, and valves have been set. The Dam itself is substantially complete, only the earthwork remains to be done. A great deal of money has already been expended towards our goal of securing a stable water source for our area; we can't afford to quit now. A portion of the Project was completed in 1977 when Normandy Dam was closed, but the Columbia Dam remains a vital part of the original Duck River Project designed to prevent future water shortages in this area. As the TVA environmental statement notes on page A-21, "Neither unit standing alone, however, would provide the total flood control, water supply, water quality control, and recreational benefits which are needed in the area". The Dam will help our area by providing a stable and reliable source of water for domestic and industrial uses. Without the Columbia Dam, we have no guarantee of such a source.

Had we not been so totally convinced of the need for this Dam, we would have given up the fight long ago. There have been many obstacles for this project, but all have been overcome. Those obstacless were overcome because this is a worthwhile, beneficial, necessary project. Questions have been raised about the expected quality of the water in the Columbia Reservoir as a source of potable water. Many of the same questions were raised about the quality of water in Normandy. CWS records show that the level of chemicals required to treat Duck River water has been lower since Normandy Reservoir was filled. Undaunted by the facts, some Dam opponents pulled the juvenile stunt of sending a bottle of slime to our President as a symbol of "what to expect in the Columbia Reservoir". That´s a cute trick, but it conveniently ignores some interesting facts. One is that the bottle of slime came from what they call the "free flowing Duck River", not from the proposed Columbia Reservoir. There has always been algae growth in the Duck River and there probably always will be. Water systems along Duck River have long been accustomed to dealing with algae. We don´t necessarily like dealing with algae, but it is a fact of life. Besides, water with algae is better than no water at all.

Another fact involves the debates over the water quality permit for the Columbia Reservoir. All the endless hearings, protests, complaints, and delaying tactics ultimately led to a decision by Tennessee´s Water Quality Board on April 6, 1981 that the water in the proposed Columbia Reservoir would not violate State water quality standards. This decision has survived repeated challenges from dam opponents. Their challenges failed because the Water Quality Board did not base its decision on gimmicks or emotions. Its decision was based on the plain and simple facts.

The facts that are yours to consider differ from those faced by the Water Quality Board, but that´s exactly what we are asking you to do. As you evaluate the future of the Columbia Dam, consider the facts. Give adequate weight to the most important fact of all--the future of our area depends upon a reliable and abundant supply of water. Without the Columbia Dam, we simply don´t have that supply. You have supported us in our efforts for a a great number of years. We can only ask for your continued support as we strive to secure the completion of the Columbia Dam.

Mr. CARROLL. I would like to expand on the issue that has already been mentioned by the mayor, Judge Rayburn, and Connie—water supply is the most important part of this project.

I am in charge of providing an abundant supply of high quality water for about 40,000 people in the middle Tennessee area as manager of the Columbia Water System. We developed an intense concern about the future reliability of the supply for those people.

Our distribution system—and again I will summarize the best I can—we have experienced a 52-percent growth in the past 10 years in the water we are pumping. We expect that to continue and, hopefully, expand. About 40 percent of the water we produce annually is consumed by residential users.

Our concern is very simple: can the Duck River, without the Columbia Dam, continue to support our area? We just really don't think so.

WATER RELEASES FROM NORMANDY RESERVOIR

Recent history supports our concerns and the drought of 1980 and 1981 that extended across the entire Duck River watershed. The Tennessee Valley Authority kept records during this time showing the water coming to Columbia was entirely supplied through releases from Normandy.

During this drought, the demand for water downstream drastically reduced Normandy's level. Its normal pool is 875 feet above sea level. During most of 1980 and all of 1981, the level of that reservoir never exceeded 865 feet. The lake is normally over that level for 8½ months out of each year.

That may not sound so bad, but it is 22 feet below normal and only 23 feet above the lowest discharge point. That gives a volume reduction of usable water of some 64 percent lower than normal. That is more than enough to get us a little scared downstream.

So again, summarizing, our concern at the water system is the supply of water for domestic uses. We appreciate the support you all have given us in the past year and hopefully that will continue. Thank you.

Senator SASSER. Thank you.

ENDANGERED SPECIES ISSUE

Mr. Ross. Mr. Chairman, I am Claybourne Ross. I have been working on this Duck River project for many, many years. We recognize that we have been a victim of the abuse that has been made of the Endangered Species Act over the years. That has been one of the stumbling blocks in the completion of the Columbia Dam.

We realize that that must be changed. We asked the Congress for an exemption from the rules and regulations of the Endangered Species Act.

In addition, we have recently learned of some new technologies relative to the shellfish and relative to the mussels. We are making an effort to bring this to the attention of the people not only of Congress, but also the agencies involved; namely, the Fish and Wildlife Service and the people of the TVA.

It is our understanding that a TVA biologist has reproduced mussels in the laboratory. We think that this is very, very significant and that the distribution of them under natural conditions has been that host fish. The host fish is the means of locomotion of the mussel. Man can take these reproductions and distribute them as they see fit.

We also understand that in China they have been producing mussels in fish ponds for some 3 years or more. So we think that is a very significant development.

It is going to be our effort to try to get a clearance from this Endangered Species Act for the mussel for our area.

Thank you very much. We are most appreciative of all the interest and efforts of this committee.

Senator SASSER. Thank you, Mr. Ross. We are most appreciative of the fine service you have rendered over the years in the Duck River development projects.

Mr. COOK. Senator Sasser, my name is Terry Cook. I am president of the Maury County Chamber of Commerce. I am here today representing over 800 members of our local chamber of commerce.

I am not going to give you the standard chamber pitch. You know what it is. We are here and we exist to promote the economic welfare and economic climate of our county and our region. One of the ways we must do that is to promote vigorously industrial growth.

Our county has recently built and developed a 300-acre industrial park, one of the finest facilities you would find anywhere. Our job at the chamber of commerce is to try to help them fill that park.

One of the things that is absolutely necessary to do that is a potable water supply for not only our people but for our industry.

We are here today to ask for your support, and we would pray the committee and the Senate would not leave us a gray concrete monument, a tombstone, if you will, Senator, to Government inefficiency. You have been to Maury County. You have seen our landscape. The Lord has blessed us with a beautiful land. It is being marred by this tombstone to inefficiency.

We would ask your support and your continued support in bringing not a new project but bringing a very old project to a state of completion. Thank you.

Senator SASSER. Thank you, Mr. Cook.

STATUS OF COLUMBIA DAM CONSTRUCTION

Mr. BEARD. Mr. Chairman, I came to show you, not to say anything. I have a couple of pictures here of our dam that was made Thursday afternoon.

I am sorry; I am Clyde Beard, a board member of the Upper Duck River Development Agency. I have been supporting Columbia Dam for 20 years now.

I would like, if I may, to present these pictures to you of the dam from the air at this time, please.

Senator SASSER. Yes, we would be delighted to receive them.

Viewing these photographs, what we see here is virtually a completed dam.

Mr. BEARD. That is correct.

Senator SASSER. It is sitting out in an open area, and all that needs to be done is to close the gates and build the earthen wall on one side and the dam is completed.

Mr. BEARD. That is correct. All we need to do is move the earth around in the now free form stream and turn the channel back into the main channel. The upper channel has been grouted and all we need to do is move the mud.

Senator SASSER. We are going to retain these photographs, with your permission. We will attempt to make them a part of the record. I am not sure we can reproduce them, but we will keep them in the file. These photographs will be very useful to me, I think, in showing some of my other colleagues on the Appropriations Commtitee just where we are. So I thank you for bringing these to us.

Mr. BEARD. Thank you, sir.

CLOSING REMARKS

Senator SASSER. I want to thank the supporters of the Columbia Dam for appearing here this morning. We very much appreciate your testimony and certainly I am going to continue to work with you and the people of the area to solve the problems just as expeditiously as possible so that this project can be completed.

We know that the project is being held up now because of the endangered species problem. I am certainly going to ask the other members of our congressional delegation to join with me in asking the Department of the Interior and the Tennessee Valley Authority to show a little more flexibility and perhaps a little more reasonableness in this whole matter.

BUDGETARY CONSTRAINTS

Now, having said that, I think we need to face facts, and I need to point out something that I think you all already know. That is that the TVA is experiencing very, very serious budgetary problems. We have heard earlier today that the President is recommending a 71-percent cut in the basic TVA budget. It is going to be very difficult for this committee to find funds necessary to restore just the basic TVA budget.

So, even if the endangered species problem is worked out, the funding problem is still going to remain.

Now, you are going to have my continued support and I think, I don't mean to sound pessimistic, because I am not, but I think we all need to be aware that there are very, very difficult times ahead for the Columbia Dam project even after we have overcome the problem with the endangered species, which I think will be overcome in due course—not as expeditiously, perhaps, as we wish, but I think we will overcome that.

I would like for all of you to use your influence with those that you may be able to infleunce in the national administration, those you might be able to influence over in the Office of Management and Budget, and certainly I will use my influence with TVA and we will attempt to go forward when we can. But we have this very serious problem of budgetary constraints that are probably as constricting today, in fact I won't say probably, I would say are as constricting today as any time in the history of the Tennessee Valley Authority. So I think that ought to be said.

I want to also say that the Congressman from your district, the Honorable Bart Gordon, has come to me and expressed a profound interest in seeing that this project be completed. He would be here today but he had to leave early because he had to catch an airplane to get back to the State. But he did fly up here last night specifically to be with the proponents of the Columbia Dam project, and he assures me that he will do everything within his power to see that the project is given a full and fair and favorable hearing in the House of Representatives. I think there is great support for it there, as you all know.

Ladies and gentlemen, I thank you very much for appearing here this morning. I thank you for giving us your views on the Columbia Dam, and we are going to continue to work and fight together to see that this project becomes a reality. Thank you.

Southeastern U.S. Submitted Statements

Prepared statements from members of Congress

Now, because of the reduced hearing schedule for outside witnesses, the chairman of the subcommittee, Senator Hatfield, wants to include all prepared submitted statements in the record.

I understand that several statements have been received from numerous Senators and Congressmen from the Southeastern area. Without objection, those statements will be made part of the record at this point.

[The statements follow:]

Statement of Senator Howell T. Heflin

Alabama waterway projects

Mr. Chairman, as you and the other members of this committee know, I have a deep and abiding interest in the development of the water resources of Alabama and our Nation. I appreciate the opportunity to appear before you today and to join with other members of the Alabama congressional delegation as well as with spokesmen from several Alabama river development associations in support of funds for the continued and orderly development of the water resources of Alabama.

Because of your crowded agenda, my remarks will be brief. It would, I feel, be much more beneficial to this committee to receive the views and comments of those here today who have traveled great distances to present their cases to you in behalf of their respective waterway systems. Those who are here today are dedicated to the principle that the citizens of Alabama will realize and benefit from the vast potential of Alabama's rivers and streams. I warmly commend their testimonies to you.

Mr. Chairman, water is Alabama's richest and most abundant natural asset. Many, if not most, of the projects for which we are seeking funds will serve several purposes at once; namely, more and better economic opportunities, more and better public health

and safety, more and better recreational opportunities, more jobs and a better standard of living. Indeed, the overall quality of life in our State and elsewhere will be enhanced if we fund these projects and bring them to complete fruition.

We are most grateful to this committee for its interest in the full development of the water resources of Alabama. With your continued help, these developments will return rich dividends to our citizens and will confirm the faith and high expectations of this committee.

Mr. Chairman, I might add a brief comment on proposed user fees to be levied on the users of the inland waterways. You will find that all of the Alabama river development associations present today vigorously oppose any additional taxes or ton-mile fees proposed by the administration. The towing industry is barely surviving now. This industry already faces an automatic October increase in the fuel tax to 10 cents per gallon. The shippers cannot absorb any new cost and remain competitive internationally.

TENNESSEE-TOMBIGBEE WATERWAY

Mr. Chairman, I continue to stand firm in my conviction that no project holds so much promise for the people of Alabama and our Nation as does the Tennessee-Tombigbee Waterway, and because I feel so strongly about the vital importance of this project to our citizens, I have been proud to stand shoulder to shoulder with other supporters of the waterway in the fight to make the project a reality.

In January of this year, the first ton of cargo was shipped on the Tenn-Tom, and as expected, the first shipment, which included 66,000 barrels of petroleum, reached its destination in 30 hours less than via the Mississippi-Ohio-Tennessee Rivers route.

Mr. Chairman, there were a few surprises as more than 100,000 tons of cargo were shipped on the Tenn-Tom during its month of operation. The first barges moving through the waterway between Mobile and the Tennessee River all moved upstream, not downstream as predicted. And contrary to original estimates, most of the cargo moving through the waterway was not coal. These facts, Mr. Chairman, illustrate the versatility of this magnificent waterway. I am sure the committee will receive a formal invitation from the Tenn-Tom Waterway Development Authority to the dedication ceremonies scheduled for June I of this year. It is my hope that all of you will be able to join me at this historic event. Here we can all witness firsthand the results of the cooperative efforts of this committee and the perseverance of so many great Americans to see this dream become a reality.

The Tennessee-Tombigbee Waterway now connects 16,000 miles of inland water in 23 States. There are tremendous benefits awaiting our citizens as a result of the development of this water system.

I urge the committee to approve the budget request for the operation and maintenance of the Tenn-Tom.

WARRIOR-TOMBIGBEE WATERWAY AND MOBILE HARBOR

The President's budget for the 1986 fiscal year calls for $8.4 million in operation and maintenance funds for the Warrior-Tombigbee River system. This figure, I believe, is approximately $4 million below the average of that which has been required over the past 5 years.

Mr. Chairman, this is a serious deficiency which could threaten the future of efficient and reliable water commerce. I might add that the Warrior-Tombigbee Development Association will seek to increase funding by some $3 to $4 million to recover this reduction in traditional operation and maintenance.

Mr. Chairman, witnesses from the association will also request the approval of additional funds to permit the continued planning and engineering effort directed toward the feasibility of replacing the lock at the Oliver lock and dam on the Warrior River near Tuscaloosa. I endorse their request of $600,000.

The Oliver replacement has now been favorably reported by the Board of Engineers for Rivers and Harbors. I would add that authorizing legislation for this project passed the House last year. Last week, I introduced legislation to authorize construction of the Oliver replacement.

Ironically, Mr. Chairman, the William Bacon Oliver lock and dam was the first structure constructed under the modernization program which contemplated the construction

of five new locks and dams to replace the original system of 17 dams and 18 locks with the exception of the uppermost structure in the system; namely, the John Hollis Bankhead lock and dam. Time and progress, however, have made the Oliver obsolete as evidenced by the chronic barge congestion at the lock whose dimensions are only 95 feet by 460 feet. A new lock with dimensions of 110 feet by 600 feet is badly needed if traffic on this busy river system is to continue unimpeded.

The proposed budget for fiscal year 1986 requests $1,927,000 for operation and maintenance funds for the Port of Mobile. Witnesses present will provide the justification for the approval of these moneys for Mobile Harbor. The Port of Mobile is Alabama's only seaport and is one of the Nation's great natural harbors. The Port of Mobile is strategically located and for many years has ranked among the top 10 ports in the United States.

I urge the committee to approve the budget request for these items.

APALACHICOLA-CHATTAHOOCHEE-FLINT WATERWAY

Mr. Chairman, I have testified in years past in behalf of funds for the tri-rivers system. In my previous testimonies, I have endeavored to stress upon the committee the severe navigation problems which exist on the system, particularly during periods of low river flow.

There is no doubt that this splendid river basin is ideal for economic growth, but commercial users of the waterway must have the assurance of navigation on a year-round basis. The main obstacles to navigation, the rock protrusions, have been removed and the Army Corps of Engineers has determined that the required 9-foot depth will be maintained 90 percent of the year. In fact, Mr. Chairman, cargo tonnage on the tri-rivers system increased by 75 percent this year. The President's budget request for the 1986 fiscal year is only $2.9 million for operation and maintenance on the Apalachicola-Chattahoochee-Flint Waterway. The average O&M funds for the past 5 years have been $4.5 million. Mr. Harcourt, president of the Tri-Rivers Waterway Development Association will testify to the need of increasing the O&M funds. I endorse their request of $4,751,000.

Mr. Chairman, the Tri-rivers Waterway Development Association will also request the committee to approve $479,000 for a broad basin study on the ACF Waterway. This study will allow the Corps of Engineers to resolve issues identified in the 1983 memorandum of agreement by the three States and a continuation of the ongoing "308" study.

Funds for proper navigation on the ACF River system is a must. The waterway could be an important catalyst for economic development in the tri-State area. Results of the 32-county market study that will be given by Mr. Harcourt point out just how important the waterway could be economically.

Mr. Chairman, I urge the committee to approve the request set forth today for operation and maintenance funds and the request for the survey and study funds needed to begin the quest toward maintaining the congressional authorized navigation channel.

COOSA-ALABAMA RIVER SYSTEM

Mr. Chairman, I am happy to have this opportunity to speak in behalf of funds for the Coosa-Alabama Waterway. I strongly urge approval of moneys contained in the budget for the coming fiscal year for various projects associated with this mighty river basin.

The budget requests operation and maintenance funds in the amount of $12,342,000 for four major projects along the Coosa-Alabama Waterway. The four projects include Millers Ferry lock and dam, Robert F. Henry lock and dam, Allatoona Lake, and Carters Lake. These facilities and reaches on the river system must be maintained so that powerplant output and navigation will operate at peak efficiency.

I would add, Mr. Chairman, that the Coosa-Alabama Improvement Association will seek to increase funding for the Alabama-Coosa River project. Their testimony will set forth the basis and justification for their request of $9,650,000.

Mr. Chairman, navigation of the Alabama River from Mobile to Montgomery—a distance of 345 miles—became a reality over a decade ago. I had hoped to be in a position this year to push for funds to extend navigation on the upstream portion of the

Coosa-Alabama River system. I reluctantly conclude for the interim that the timing is not right for a new construction start such as the Coosa. However, I have not given up by any means.

The regional benefits of the project are firmly established. Extending the navigation channel to Gadsden, Ala., and Rome, Ga., is an excellent investment opportunity which can provide a significant and enduring stimulus to the economy. I ask that the members of the committee keep the Coosa project high on the list of priorities when our overall economy improves.

Mr. Chairman, I also urge approval of the budget request of $500,000 to initiate the survey study of Dalton Lake in Georgia.

In 1982 the President signed into law a bill to rename the Jones Bluff lock and dam on the Alabama River in honor of the late Dr. Robert F. Henry, who was the guiding force behind the development of the Coosa-Alabama River system for a quarter of a century. I attended formal ceremonies naming the Jones Bluff in honor of Dr. Henry. It was his dream and that of other farsighted men to make the entire river system navigable. I shall continue to do all in my power to make Dr. Henry's dream a reality.

Statement of U.S. Representative Richard C. Shelby of Alabama

WARRIOR-TOMBIGBEE WATERWAY SYSTEM

Mr. Chairman, I appreciate the opportunity to appear today in behalf of a project that is particularly close to me, the Warrior-Tombigbee Waterway System.

This particular river system travels right through the center of the 7th Congressional District as it makes its way from Birmingham to Mobile on the Gulf of Mexico. Obviously, this thoroughfare is of vital economic value to west Alabama and certainly holds the key to its economic future as an attractive spot for industrial locations.

Several thousand farmers from 21 Alabama and Mississippi counties ship their grain to Mobile for export via the waterway.

There are many other important commodities moving on the Warrior-Tombigbee Waterway, as well as large amounts of coal, steel, and farm products. Various ores, crude and fuel oils, chemicals, aggregates, and wood products comprise the other major elements.

The operations and maintenance request by the Corps of Engineers for fiscal year 1986 is $8.4 million. I would like to point out that this proposed amount is more than $4 million below the average of that which has been required over the past 5 years. For the Port of Mobile, the proposed funding is $2 million, which although below the annual average, does seem adequate for fiscal year 1986. These are very serious deficiencies and certainly threaten the future of efficient and reliable water commerce.

Also, the Corps has several projects underway designed to improve channel efficiency and reduce future costs, which could not be continued. An additional $3 to $4 million is needed for this budget item.

The Warrior-Tombigbee Waterway now has a system of modern locks and dams with the exception of one lock, the William Bacon Oliver. The ever-increasing demands for efficient transportation of Alabama's valuable resources require that the Warrior-Tombigbee operate at peak efficiency on a full-time basis, and this is seriously hampered by this one remaining pre-World War II lock.

The substandard lock is smaller than the other five, all of which are the newer size of 110 to 600 feet. Six barge tows, typically seen on the waterway, are able to "lock through" all locks except the Oliver in a single pass. However, at Oliver the chamber of 95 by 460 feet requires the six-barge tow to break apart and lock through in two passes. This takes, on the average, an additional 1½ hours, or nearly three times that of a single-pass lockage.

Studies by the Board of Engineers for Rivers and Harbors to complete the modernization of the Oliver lock have been favorably reported. The Corps has requested $600,000 to continue the planning and engineering for the new Oliver lock. This level of funding should support the timely and orderly completion of all the work which can be done prior to congressional authorization of the new lock.

Mr. Chairman and members of the committee, the State of Alabama's economic future depends on the full operating capacity of the Warrior-Tombigbee Waterway for it is a promising source of jobs and revenue to the State. Of course, I am dedicated to the achievement of a balanced budget. Our waterways are, however, more than just expenditures of Federal money. They represent the most energy-efficient and thus cost-effective mode of transportation available today. Projects such as the Warrior-Tombigbee Waterway provide local employment opportunities, growth in service industries, and increases in agricultural production all along the waterway's route.

I appreciate the opportunity to appear before this distinguished committee on behalf of the Warrior-Tombigbee Waterway System and I urge you to continue funding at the fullest possible extent of this vital Alabama waterway project.

COOSA-ALABAMA RIVER SYSTEM

Mr. Chairman, I am grateful for this opportunity to appear in behalf of the Alabama-Coosa River system. a system that has already meant much to the growth of Alabama and will continue to be one of the keys to future economic developments of the State.

A total of $23,922,000 in operation and maintenance funds has been requested for fiscal year 1986 for upkeep and improvement of the system. These requests include $9,653,000 for the Alabama-Coosa River system as a whole, $2,511,000 for the Robert F. Henry lock and dam, $3,257,000 for the Millers Ferry lock and dam, $1,927,000 for the Mobile Harbor, $4,132,000 for Allatoona Lake, and $2,442,000 for the Carters Lake navigation project.

An amount of $500,000 has been requested for surveying at Dalton Lake, Dalton, Ga., on the headwaters of the Coosa. This would provide information on needed storage water to maintain navigation depths on the lower Alabama River.

This waterway project is a solid investment in future productivity and economic progress because by connecting Gadsden, Ala., and Rome, Ga., with the Gulf of Mexico, it is projected that the completion of all projects currently on line will make this waterway of service to more than one-half of Alabama's citizens directly. The spinoff of economic benefits cannot be underestimated.

Congress is currently in the process of serious budget scrutiny, which in many cases is long overdue. I am hopeful, however, that Federal support for the Coosa River project will withstand the inspection of the most budget-conscious among us. By completing this navigational system, Congress will have helped connect Alabama with inland waterway systems nationwide. As we face increasing energy costs and potential fuel supply disruptions, it makes the most obvious sense to put Federal dollars behind the most energy efficient transportation mode around.

Again, Mr. Chairman and members of the committee, I appreciate the opportunity to appear before this distinguished committee on behalf of the Coosa-Alabama River system, and I urge you to continue funding at the fullest possible extent of this vital State waterway project.

Thank you.

STATEMENT OF U.S. REPRESENTATIVE SONNY CALLAHAN OF ALABAMA

MOBILE BAY AREA PROJECTS

Mr. Chairman, I am happy to appear here today to request fiscal year 1986 appropriations for a number of important projects in the Mobile Bay area.

The Mobile Harbor Channel Deepening project has been included in the water resources authorization bill introduced on the first day of the 99th Congress and was in similar legislation that passed the House last year. I am optimistic that we will be able to get the project authorized this year and pass an appropriation of $12.340 million for beginning construction. In the meantime, it is imperative that we continue to provide adequate operation and maintenance in Mobile Harbor. I request $4.132 million for O&M.

The flood control project for Three Mile Creek in Mobile is also in the water resources authorization bill. The project recommendations should meet with the cost-sharing objectives of the Administration. Again, I am hopeful that this project will be authorized this year and that it will be eligible for construction funding in the amount of $2.6 million.

A resolution authorizing a study of the feasibility of deepening Bayou La Batre Channel was approved in 1974 and was first funded in fiscal year 1984. The coastal area of Alabama has experienced a great deal of oil and gas exploration activity in recent years and this increased activity has further pointed to the need for this channel improvement. A $66,000 funding level is required to continue the Bayou La Batre Channel Deepening Study in fiscal year 1986. The Administration has recommended that level, and I request your favorable consideration of this study.

Most of our needs in the Mobile area have to do with vital ongoing maintenance activities. Our major industries, as well as commerce from other areas of the nation, are dependent on an efficient waterway system for the transportation of commodities. Commercial and recreational fishermen depend on having access to fishing areas in authorized channels in Mobile Bay and in the Gulf, and they depend on having reliable access to safe harbors. These are just a few of the reasons why maintenance activities are so important. I urge the committee's consideration of the Corps' full operation and maintenance capability on these projects: Bayou La Batre, $734,000; Gulf Intracoastal Waterway, $4.376 million; Dog and Fowl Rivers, $119,000; Perdido Pass, $517,000; and Dauphin Island Bay, $533,000.

Thank you again, Mr. Chairman, for allowing me to testify in support of these important projects.

TENNESSEE-TOMBIGBEE WATERWAY

Mr. Chairman, it is an honor to come before you to add my enthusiastic support to the Tennessee-Tombigbee Waterway funding request for fiscal year 1986.

As you well know, we will officially celebrate the opening of this vital transportation link on June 1 in Columbus, Mississippi, and in my hometown of Mobile. Those ceremonies will be a testament to the hard work of many citizens and members of Congress, notably the distinguished chairman of this panel. I am particularly grateful for the unwavering support you have given the Tenn-Tom since it will provide a tremendous economic boost to my district.

Mr. Chairman, I can't say I regret not having been here for the battles that were waged to complete construction of the Tennessee-Tombigbee Waterway. That construction is complete and traffic is moving on the entire system. We have invested dearly

in the project and must assure its adequate maintenance to protect that investment by allowing efficient commodity movement. The operation and maintenance funding level needed in fiscal year 1986 is $14.462 million. I hope the committee will approve this amount.

I appreciate having the chance to appear here today, and I hope to welcome you all to Mobile on June 1.

COOSA-ALABAMA WATERWAY

Mr. Chairman, members of the subcommittee, I am happy to appear here today to voice my support for the fiscal year 1986 appropriation request for the Coosa-Alabama River System.

For operation and maintenance along the system, $23.922 million is requested in FY 1986. Specifically, $9,653,000 is required for O&M on the Alabama River; $3,257,000 for the Millers Ferry Lock and Dam; $2,511,000 for the Robert F. Henry Lock and Dam; $1,927,000 for Mobile Harbor; $4,132,000 for Allatoona Lake in Georgia; and $2,442,000 for Carters Lake in Georgia. The total funding level, while above the budget recommendation, are necessary to ensure proper maintenance of the river system. Without adequate maintenance, the river will not achieve maximum efficiency and navigation will be impeded. Operation and maintenance work on the Alabama River will keep hydro power plants in good condition and will allow dredging and routine maintenance work to continue to provide us with the most energy-efficient means of transportation. If we do not provide adequate funds for dredging, snagging, spoils disposal, repair of public facilities, and other important maintenance work, we will only have more costly repair bills in tne future.

Although the Coosa River Navigation Project, which would extend the navigation project from Montgomery to Gadsden, received a negative benefit/cost analysis, I am encouraged that the State of Alabama is seriously pursuing the project. There will be no request for construction funds in fiscal year 1986. However, State officials are working to increase its contribution to the non-Federal share of the project's cost. I am hopeful that we will be in a position to get the Coosa segment of the system on track in the near future.

Mr. Chairman, I appreciate having had this opportunity to voice my strong support for the Coosa-Alabama River System. Thank you for your consideration of my request.

BLACK WARRIOR, WARRIOR, TOMBIGBEE WATERWAY

Mr. Chairman, I am pleased to be here to voice my support for the fiscal year 1986 funding request for the projects included in the Black Warrior, Warrior, and Tombigbee River System.

The Black Warrior, Warrior, and Tombigbee Waterway is an extremely successful water transportation system. Some 80 percent of the Port of Mobile's coal traffic travels on the waterway. Over 5 million tons of coal move on the system to electric generating plants. Grain from 21 counties in Alabama and Mississippi is shipped to Mobile on the waterway. It also provides substantial movement for commodities such as ore, steel, forest products, petroleum, and chemicals.

The President has requested $8.449 million for operation and maintenance on the Black Warrior, Warrior, and Tombigbee System for fiscal year 1986. The Corps of Engineers' capability is $19.794 million. I believe that adequate operation and

maintenance is crucial, and I hope you will approve an appropriate amount in this area.

The locks and dams on this system have been modernized, except for the William Bacon Oliver Lock and Dam. This facility is obsolete and is a bottleneck. Legislation passed the House last year, but not the Senate, to authorize replacement of the Oliver Lock and Dam. A similar authorization is before the Public Works Committee this year and, hopefully, will be enacted in a timely manner so that construction funds may be available in FY 1986. In the meantime, $600,000 is needed to continue design work on the project. I urge the committee's approval of that funding.

Thank you, Mr. Chairman, for permitting me to testify in support of the Black Warrior, Warrior, and Tombigbee River System and for your consideration of its needs.

STATEMENT OF U.S. REPRESENTATIVE WILLIAM H. NATCHER OF KENTUCKY

MR. CHAIRMAN, AGAIN, WE WANT YOU TO KNOW THAT WE APPRECIATE THE OPPORTUNITY TO APPEAR AT THIS TIME IN BEHALF OF THE PROJECTS FOR KENTUCKY. WITH THE EXCEPTION OF ONE OF OUR STATES, KENTUCKY HAS MORE MILES OF NAVIGABLE STREAMS THAN ANY OTHER STATE IN THIS COUNTRY. DOWN THROUGH THE YEARS, WE HAVE SUFFERED DAMAGES FROM FLOODS AND LOSS OF LIFE.

MR. CHAIRMAN, YOU AND THE MEMBERS OF YOUR SUBCOMMITTEE HAVE BEEN GOOD, NOT ONLY TO KENTUCKY, BUT TO ALL OF OUR STATES WHICH HAVE PROJECTS THAT WHEN PRESENTED WERE JUSTIFIED FROM THE STANDPOINT OF BENEFIT COST. WE HAVE ATTEMPTED ALL DOWN THROUGH THE YEARS, TO PRESENT TO YOU PROJECTS WHICH WE COULD JUSTIFY AND WITH YOUR HELP, HAVE SUCCEEDED IN BRINGING ABOUT A GOOD WATER RESOURCE DEVELOPMENT PROGRAM IN THE STATE OF KENTUCKY. IN THE SECOND CONGRESSIONAL DISTRICT AND IN THE SECTION OF KENTUCKY THAT I REPRESENT, WE HAVE COMPLETED AND HAVE IN OPERATION NOW FIVE RESERVOIRS--ROUGH RIVER, NOLIN RIVER, BARREN RIVER, GREEN RIVER, AND TAYLORSVILLE RESERVOIR. ALL OF THESE PROJECTS HAVE PRODUCED MANY BENEFITS FOR OUR PEOPLE AND ESPECIALLY DURING THE PAST 18 MONTHS. WE WOULD HAVE SUFFERED MILLIONS AND MILLIONS OF DOLLARS IN DAMAGES DURING THE PAST SEVEN MONTHS IF THESE PROJECTS HAD NOT BEEN IN OPERATION. ALL HAVE PRODUCED BENEFITS THAT HAVE JUSTIFIED EVERY DOLLAR INVESTED.

I CERTAINLY WANT TO JOIN WITH MY COLLEAGUES, NOT ONLY IN KENTUCKY, BUT IN THE OTHER STATES THAT ARE INTERESTED IN THE TENNESSEE VALLEY AUTHORITY PROPOSAL NOW BEFORE YOUR COMMITTEE AND ALSO THE PROPOSAL CONCERNING THE "LAND BETWEEN THE LAKES" IN KENTUCKY. I DO HOPE THAT YOU AND THE MEMBERS OF YOUR SUBCOMMITTEE WILL TURN DOWN THE BUDGET PROPOSALS CONCERNING THESE TWO PROJECTS. I RECALL DISTINCTLY BACK SOME 31 YEARS AGO WHEN WE WERE MAKING EVERY EFFORT TO EXPAND THE TVA SYSTEM IN ORDER TO PRODUCE BENEFITS, NOT ONLY FOR THE PEOPLE IN THE STATES WHERE THE ORIGINAL PROGRAM STARTED, BUT IN ALL OF THE STATES THAT ARE NOW A PART OF THIS SYSTEM. CERTAINLY THIS IS NOT THE TIME TO CUT BACK AND REDUCE THE AMOUNT OF THE FUNDING FOR THE TENNESSEE VALLEY AUTHORITY.

MR. CHAIRMAN, I AM VERY MUCH AGAINST THE PROPOSAL CONCERNING THE "LAND BETW[illegible]N THE LAKES." I RECALL DISTINCTLY THE HUNDREDS OF

PEOPLE WHO MOVED OUT OF KENTUCKY AND CROSSED THE RIVER WHEN THE "LAND BETWEEN THE LAKES" WAS SET UP AND PLACED IN OPERATION UNDER THE SUPERVISION AND CONTROL OF THE CORPS OF ENGINEERS. I DO HOPE THAT THE PROPOSAL NOW BEFORE THIS COMMITTEE CONCERNING THE "LAND BETWEEN THE LAKES" IS TURNED DOWN.

AS YOU KNOW, MR. CHAIRMAN, SOME $830,000 HAS BEEN EXPENDED FOR THE CAMPGROUND LAKE PROJECT BUT SO FAR, THE COMMONWEALTH OF KENTUCKY HAS FAILED TO JOIN WITH THE CORPS OF ENGINEERS ON THIS PROJECT. THERE IS NOTHING FURTHER THAT YOU AND THE MEMBERS OF YOUR SUBCOMMITTEE CAN DO AT THIS TIME ON THIS PARTICULAR PROJECT. WE HOPE THAT OUR GOVERNOR WILL ENTER INTO AN AGREEMENT WITH THE CORPS OF ENGINEERS WHICH WILL PLACE THIS PROJECT IN LINE FOR CONSTRUCTION.

MR. CHAIRMAN, I JOIN WITH ALL OF MY COLLEAGUES FROM KENTUCKY IN THE HOUSE AND IN THE SENATE IN OUR REQUESTS FOR OUR STATE AND OUR DISTRICTS.

AGAIN, I WANT YOU TO KNOW THAT I APPRECIATE THE OPPORTUNITY TO APPEAR AT THIS TIME IN BEHALF OF THE PROJECTS, NOT ONLY FOR THE DISTRICT THAT I REPRESENT, BUT FOR THE ENTIRE STATE.

I WANT TO THANK YOU AND THE MEMBERS OF THIS SUBCOMMITTEE FOR THE SUPPORT AND ASSISTANCE THAT WE HAVE ALWAYS RECEIVED DOWN THROUGH THE YEARS.

STATEMENT OF U.S. REPRESENTATIVE GENE SNYDER OF KENTUCKY

Mr. Chairman; Distinguished Members of the Subcommittee; I am pleased to once again join my Colleagues from Kentucky in front of you to direct your attention to the projects which mean so much to the citizens we represent.

As always, I appreciate your making this time available to us.

FALLS OF THE OHIO

As you will recall, on December 29, 1981, the President signed into law a Bill creating the Falls of the Ohio National Wildlife Conservation Area. This unique area contains fossils estimated to be in excess of 900 million years old which are found in the United States

only at the Falls of the Ohio. In addition, this area provides a habitat for over 250 varieties of waterfowl and shore birds.

The legislation authorizing the creation of this wildlife conservation area tasks the Secretary of the Army, acting through the Chief of Engineers, with the implementation and management of the area. This was due to the fact that the Corps already manages most of the land surrounding the conservation area because of its duties associated with the management of McAlpine Locks and Dam.

While most of the land is under Federal control, some acquisition is necessary. Consequently, the original legislation authorized $300,000 for planning and acquisition and your committee appropriated that amount. Since then it has been determined that additional funds will be needed and last year Congress enacted the Atlantic Striped Bass Conservation Act (P.L. 98-613) which contained a provision raising the authorization to $1.04 million.

I would be most appreciative if you could give this project and the additional $740,000 we need to complete it your favorable consideration. It's a small price to pay to protect a unique area.

The other major project now under way in the Fourth District, of course, is the Southwestern Jefferson County Floodwall. It is a system of earth levees, concrete floodwalls, pumping plants and related items designed to protect 32 square miles of flood plain -- some 24,100 acres in Jefferson County, Kentucky. Development in the area is currently valued at almost 1 1/2 billion dollars ($1.576 billion at 1984 values).

To date, $39.4 million dollars has been allocated. Six million dollars has been requested this year for continuation of the construction in Fiscal 1984.

It is a valuable project -- the annual benefits are estimated to be in the neighborhood of $8.4 million dollars. The remaining benefit -- remaining cost ratio is 8.6 to 1.

It's a good project and is moving along well.

I would like to thank the Chairman and the Members of this Subcommittee for your favorable treatment of the Southwestern Jefferson County Floodwall and the Falls of the Ohio Wildlife Conservation Area in the past.

And as always, I thank you for your time today and urge you to give equally favorable consideration to these projects again this year.

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PUBLIC WITNESS PREPARED STATEMENTS

Senator SASSER. The subcommittee has also received numerous statements from other outside witnesses related to projects in the Southeast United States which I ask be placed in the record as well.

[The statements follow:]

ALABAMA WATER RESOURCE PROJECTS

STATEMENT OF GOV. GEORGE WALLACE OF ALABAMA

I appreciate this opportunity to appear before this Subcommittee today along with my fellow Alabamians in support of navigation on the Black Warrior-Tombigbee Waterway in Alabama. Specifically, I endorse the request of the Warrior-Tombigbee Development Association and its supporters for continued funding of the full-time operation and maintenance of the Black Warrior-Tombigbee Waterway and of Mobile Harbor. Also, I support the request for additional funds for the Corps of Engineers to continue the planning and engineering of the new Oliver Lock.

In Alabama we are blessed with strategically located navigable waterways. The busiest of these is the Black Warrior-Tombigbee Waterway which flows from the coal rich Warrior Basin in northwest Alabama through its industrial heartland near Birmingham southward via Tuscaloosa, Demopolis and Jackson, to the Port of Mobile. This waterway is now linked to all of mid-America and the Great Lakes via the Tennessee-Tombigbee Waterway. The Black Warrior-Tombigbee Waterway now has a system of modern locks and dams with the exception of one lock, William Bacon Oliver.

Estimates indicate that 10% of our nation's coal reserves are located in the Warrior Basin of Alabama. Almost 75% of the coal traffic handled by the Port of Mobile arrives there by barge from the Warrior Basin, and over 5 million tons of coal move via this Waterway to the electric generating plants in our area. We have a number of large and experienced mining operations in the area, as well as others capable of substantial growth. The development of these coal reserves, the skills and experience of our people, and the growing world-wide demand have created new demands on the waterways. Farmers from twenty-one (21) Alabama and Mississippi counties ship their grain to Mobile for export via the Waterway. Many farm families are dependent on the Waterway for efficient transportation of their products.

Shipments of ore, steel and related products are beginning to increase substantially because of new and modern manufacturing facilities at U.S. Steel near Birmingham. The continued efficiency and modernization of the Waterway were important in U.S. Steel's recent decision on the further modernization of their Fairfield facilities. This efficiency and reliability will be significant factors in the competitiveness of these facilities. Thousands of jobs hang in the balance.

There are many other commodities moving on the waterway, such as ores, crude and fuel oils, steel products, chemicals, aggregates and wood products. Related industries, though still impacted by the world-wide recession, plan to grow and modernize. Tonnage moved on the Waterway reached a new high of over 18 million tons in 1984.

These ever-increasing demands require that the Black Warrior-Tombigbee operate at peak efficiency on a full-time basis. The operational efficiency of the Waterway is seriously impaired by the bottleneck caused by the one remaining substandard lock -- Oliver Lock on the Warrior River. This pre-World War II lock is smaller than the other five locks on this system, all of which are the new standard size of 110x600 feet. This necessitates tows being broken apart and utilizing double lockages for passage. This magnifies the need for complete efficiency and reliability of the remainder of the system.

I join with the Warrior-Tombigbee Development Association in support of the Corps of Engineers' request for $8.4 million for the regular operations and maintenance (O&M) program of this Waterway. However, we believe that $8.4 million will be inadequate for an effective O&M program. This is more than $4 million below the average amount which has been required over the past five years. This is a very serious deficiency and threatens the future of efficient and reliable water commerce. Several projects, which are underway and designed to improve channel efficiency and reduce future costs, could not be continued with the proposed funding level of $8.4 million. Therefore, we request that at a minimum an additional $4.0 million be added to the budget item for the 1986 O&M program.

Also I support the Association's request for adequate funding for operation and maintenance of Mobile Harbor. Mobile Harbor is vital to the ongoing operations of the Port of Mobile and the Black Warrior-Tombigbee Waterway. Over the past eight years the State of Alabama and the Alabama State Docks Department have invested over $250 million in expanded and improved Port facilities. The Alabama State Docks facilities now offer the most advanced coal handling technology available in this country. Similar improvements have been made for grain handling and bulk materials. It is interesting to note that the investment by this single State agency far exceeds the federal investment in building all the locks and dams on the entire Waterway. We are asking for Federal investments that pay off many fold.

I join with the Warrior-Tombigbee Development Association in support of these appropriations and confirm my continuing commitment to fulfill Alabama's part of these projects in the future. The State of Alabama has already expended millions of dollars in support of navigation on this system and will continue to provide the necessary resources to maintain it as a viable part of the inland waterway system.

Again, I appreciate this opportunity and thank this Subcommittee for its faithful support over the years.

STATEMENT OF OFFA S. NICHOLS, JR., PRESIDENT, WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION

SUMMARY OF THE REQUEST

The following is a summary of the funding items for the U.S. Army Corps of Engineers for FY86 which bear on the needs of the Warrior-Tombigbee Waterway, and which we ask the Committee to approve:

Warrior-Tombigbee Waterway	
Operations & Maintenance Funds, included in Corps' Budget Request	$ 8,449,000.
Additional Capability Funds for O&M, not included in Corps' Budget Request	11,348,000.
Total O&M Funds Required	$19,797,000.
Funds for Surveys, included in Corps' Budget Request	$600,000.
Total Survey Funds Required	$600,000.

Other needs allied to the Warrior-Tombigbee are:

Mobile Harbor	
Operations & Maintenance Funds, included in Corps' Budget Request	$ 1,927,000.
Total O&M Funds Required	$ 1,927,000.

We wish to highlight the items identified above as Additional Capability for the Warrior-Tombigbee Since these items were not included in the Corps' Budget Request, it is not clear to us whether the Committee has been informed of the essentiality of funding for certain of these Capabilities. We believe it essential to provide additional O&M funds if we are to have an adequate current year program, and to support on-going projects designed to improve safety and efficiency and reduce future costs.

Written statements of support are attached.

I am Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association. Our members represent a cross-section of agricultural and industrial activities in the Warrior-Tombigbee basin in Alabama, and eight other states. The Association was formed in 1951 to work for the redevelopment of the Warrior-Tombigbee Waterway System. Construction of the original 17 locks and dams began in the late 1870's and was completed in 1915. The navigation system provided by these locks and dams had gradually deteriorated and by the mid-1950's the annual tonnage had levelled off at 2.5 million tons due to the condition and limited capacity of the obsolete locks.

The Association's objectives have been not only the replacement of the outmoded locks and dams and improvements in the Mobile Bay area, but also the appropriation of sufficient O&M funds to support reliable

navigation. Congress has generally appropriated the necessary funds to support these objectives. There are now only six locks in the 400-plus miles from the head of navigation, located northwest of Birmingham, to the Port of Mobile. During the studies which resulted in this redevelopment, it was projected that by 1980 the Waterway would carry some 8 million tons. These levels were reached in 1966, and by 1980 twice that projected tonnage was being moved on the waterway. Despite the prolonged economic downturn, traffic has begun to grow again, exceeding 18 million tons in 1984.

The Warrior-Tombigbee Waterway now has a system of modern locks and dams with the exception of one lock, William Bacon Oliver. While prior to the late 1970's the waterway had operated in a generally efficient and reliable manner, we now have a different set of circumstances. These new circumstances reflect not only the impressive growth up to now and the ravages of time and the elements, but even more the current economies of world markets. Some estimates indicate that 10% of our nation's coal reserves are located in the Warrior Basin. Seventy percent of the coal traffic handled by the Port of Mobile arrives there by barge from the Warrior Basin, and over 6 million tons of coal move via this waterway to the electric generating plants in our area. We have a number of large and experienced mining operations, as well as others capable of substantial growth. The development of these coal reserves, the skills and experience of our people, and the growing world-wide demand have created new demands on the waterway. Farmers from twenty-one (21) Alabama and Mississippi counties ship their grain to Mobile for export. These farm families are dependent on the waterway for efficient transportation of their products.

Shipments of ore, steel and related products are beginning to increase substantially because of new and modern manufacturing facilities at U.S. Steel. The continued efficiency and modernization of the waterway were important in U.S. Steel's recent decision on the further modernization of their Fairfield facilities. A new mini-mill is being built near Tuscaloosa. The efficiency and reliability of the Waterway will be significant factors in the competitiveness of these new facilities. Thousands of jobs hang in the balance.

There are many other commodities moving on the waterway, such as other ores, crude and fuel oils, other steel products, chemicals, aggregates and wood products. Related industries, though still impacted by the world-wide recession, plan to grow and modernize.

These ever-increasing demands require that the Warrior-Tombigbee operate at peak efficiency on a full-time basis. Our operational efficiency is seriously impaired by the bottleneck caused by the one remaining substandard lock -- Oliver on the Warrior River. This lock has had to be closed 4 times during the last 60 days for unscheduled maintenance. Oliver, a pre-World War II lock, is 95x460 feet and is smaller than the other five, all of which are the new standard size of 110x600 feet. This necessitates tows being broken apart and utilizing double lockages to pass through. The Corps of Engineers has completed the study on the feasibility of building a new lock and, based on this report, the Chief of Engineers has recommended its replacement. Funds for Continued Planning & Engineering for this project are in the FY86 budget request for the Corps. The authorization for its replacement is pending before the Congress in separate legislation. Meanwhile, it is even more important that the remainder of the waterway operates at full efficiency.

Because of the waterway, millions of dollars have been invested by industry, farmers and other governmental agencies, providing thousands of jobs. The Alabama State Docks' $250 million expansion program is complete and this facility now offers the most advanced coal handling technology available in this country. Similar improvements have been made for grain handling and bulk materials. It is interesting to note that the investment by this single local agency far exceeds

the federal investment in building all the locks and dams on the entire waterway. We are asking for Federal investments that pay off many fold.

These are but examples of how this Waterway is so central to the economy of this entire area, impacting both domestic and international markets. Attached with this statement are letters from our members further highlighting this importance. I hope you will note the wide range of interests represented by these statements. Included are financial institutions; public utilities; both deep water and inland port facilities, representing both public and private ownership; coal mining, both deep and surface; manufacturers; agri-business; suppliers; constructors; and, of course, marine interests. These represent a real cross-section of the economic heartbeat of an entire region.

With respect to the actual funding needs, we support the Corps' request for O&M funds for the Warrior-Tombigbee. We are concerned, however, that the requested level of funding, $8.4 million, will not support the kind of O&M program which has historically been required to keep the system reliable and efficient. The requested funding is some $5 million below the average actual requirement over the past five years. This level of funding will not support full-time and efficient operations. The stoppages, delays, and inefficiencies which would result could well be the straw which breaks the camels back for many of our companies struggling to survive and become competitive again. Several years ago a channel rehabilitation program was undertaken to reduce sedimentation and shoaling, thereby reducing Operations & Maintenance costs in future years. Currently, non-structural measures are underway which will increase efficiency and traffic flow through several locks, thereby enhancing their ability to handle increasing traffic. If the investment in these well thought out and cost effective projects is to continue, the shortage is some $11 million. In our area, with unemployment still among the highest in the nation and with basic industry still struggling to become competitive and get back on its feet, this short fall would be devestating.

We note with great pleasure the inclusion of requested Survey funds in the amount of $600,000 to complete the orderly and efficient planning for the new Oliver Lock. The Oliver Lock study has been approved by the Chief of Engineers and his favorable report was sent to the Secretary of the Army in September of last year. Through the wisdom and steadfast support of the Appropriations Committee, it has been possible to accomplish the planning process on an orderly and efficient basis. We request your support once again for this $600,000 to complete the job.

The following is a summary of the funding items which bear on the needs of the Warrior-Tombigbee Waterway, and which we ask the Comittee to approve:

Warrior-Tombigbee Waterway	
Operations & Maintenance Funds, included in Corps' Budget Request	$ 8,449,000.
Additional Capability Funds for O&M, not included in Corps' Budget Request	11,348,000.
Total O&M Funds Required	$19,797,000.
Funds for Surveys, included in Corps' Budget Request	$600,000.
Total Survey Funds Required	$600,000.

Other needs allied to the Warrior-Tombigbee are:

Mobile Harbor	
Operations & Maintenance Funds, included in Corps' Budget Request	$ 1,927,000.
Total O&M Funds Required	$ 1,927,000.

In closing I wish to emphasize that the funds which we seek are of the investment category, not expense. This is seed money, spawning reinvestment many times over.

We fully endorse and seek the approval of these items. I, as President of the Warrior-Tombigbee Development Association, our other Officers, our Board of Directors, and our Members appreciate the consideration of the Chairman and Members of this Subcommittee and its staff have shown us over the years. We ask for your support once again.

We are submitting additional written statements of support, representing a cross-section of business, industry and the public.

Thank you for your consideration. We stand ready to answer questions.

WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION

WASHINGTON APPROPRIATIONS HEARINGS

LIST OF STATEMENTS

Alabama By-Products Corporation, Birmingham, Alabama
Alabama Electric Cooperative, Andalusia, AL
Alabama Power Company, Birmingham, AL
Alabama State Docks Department, Mobile, AL
American Commercial Barge Line Co., Harahan, LA
AmSouth Bank International, Mobile, AL
Birmingham Area Chamber of Commerce, Birmingham, AL
Buffalo Rock Company, Birmingham, AL
Chicago Bridge & Iron Co., Birmingham, AL
Coal Systems Sales, Inc., Birmingham, AL
Dixie Carriers, Inc., Houston, TX
Dravo Natural Resources Company, Mobile, AL
Drummond Coal Sales, Mobile, AL
First National Bank of Tuskaloosa, Tuscaloosa, AL
Gulf Power Company, Pensacola, FL
Harbert International, Birmingham, AL
Harrison Bros. Dry Dock & Repair Yard, Mobile, AL
Hunt Oil Corporation, Tuscaloosa, Alabama
T.L. James & Company, Kenner, LA
Merchants National Bank, Mobile, AL
Mississippi Power Company, Gulfport, MS
Mobile Area Chamber of Commerce, Mobile, AL
Mobile Press Register, Mobile, AL
Parker Towing Company, Inc., Tuscaloosa, AL
Russell Coal Inc., Jasper, AL
South Central Bell, Birmingham, AL
Southern Company Services, Birmingham, AL
Soya Grain Company, Inc., West Point, MS
State of Alabama, Office of the Governor
State of Alabama, Dept. of Economic & Community Affairs
Tenn-Tom Towing, Inc., Mobile, AL
Thompson Tractor Company, Inc., Birmingham, AL
U. S. Steel Corporation, Fairfield, Alabama
Volkert & Associates, Inc., Mobile, AL
Vulcan Materials Company, Birmingham, AL
Jim Walter Resources, Inc., Brookwood, AL
Warrior & Gulf Navigation Co., Chickasaw, AL

LIST OF WITNESSES

WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION

The Honorable Howell Heflin - Senator-Alabama
The Honorable Jeremiah Denton - Senator-Alabama

The Honorable Sonny Callahan - Member of Congress-Alabama
The Honorable Bill Dickinson - Member of Congress-Alabama
The Honorable Ben Erdreich - Member of Congress-Alabama
The Honorable Ronnie Flippo - Member of Congress-Alabama
The Honorable Bill Nichols - Member of Congress-Alabama
The Honorable Richard Shelby - Member of Congress-Alabama

The Honorable Bill Baxley - Lieutenant Governor, Alabama
Mr. W.M. "Bill" Rushton - Director, Alabama Department of Economic & Community Affairs
Mr. Walter Stevenson - Alabama Department of Economic & Community Affairs

Mr. Sheldon L. Morgan - Chairman, Warrior-Tombigbee Development Association
Mr. Tim Parker, Jr. - Vice Chairman, Warrior-Tombigbee Development Association
Mr. Offa S. Nichols, Jr. - President, Warrior-Tombigbee Development Association
Mr. Paul Bailey - Government Affairs, Southern Company Services, Washington, D.C.
Mr. N.J. Barchie, Jr. - President, Warrior & Gulf Navigation Co., Chickasaw, AL
Mr. E.G. Browning - Director of Traffic, Alabama State Docks, Mobile, AL
Mr. Les Hudgins, Manager of Transportation, Harbert International, Birmingham, AL
Mr. John L. McCarron, Jr. - President, Ryan-Walsh Stevedoring Co., Mobile, AL
Mr. Marrion Rambeau - Director of Industrial Development, Chamber of Commerce, Mobile, AL
Mr. Steve Still - Government Affairs, SONAT, Inc., Washington, D.C.
Mr. Leon Torbert - Vice President, Radcliff Materials, Mobile, AL

STATEMENT OF N.J. BARCHIE, JR., PRESIDENT, WARRIOR & GULF NAVIGATION CO.

I am Nicholas J. Barchie, Jr., President of Warrior & Gulf Navigation Company. Our company is a member of the Warrior-Tombigbee Development Association and thereby in support of the testimony to be presented by Mr. Offa Nichols as President of the Association. In the following paragraphs, we wish to address the utmost importance the Warrior-Tombigbee Waterway and the Port of Mobile means to our company.

Warrior & Gulf Navigation joins in a collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway due to lower costs, energy efficiency, and the major importance it has on domestic and international trade; e.g. low transportation costs via water is imperative to the coal producers, farmers and paper companies in Alabama to maintain competitive prices in the world market in the movement of their coal, grain and forest products.

Warrior & Gulf is a barge line located in Chickasaw, Alabama and owns 27 towboats and 310 barges making us one of the larger water carriers operating on the BWT system. With our current equipment ownership our annual capacity is approximately 10,000,000 tons. Additionally, we operate a coal handling and iron ore facility and one barge drydock at Port Birmingham; one barge drydock and one boat drydock at our Chickasaw facilities; and, a wholly owned subsidiary of Warrior & Gulf, Mobile River Terminal, is another bulk terminal handling various cargoes from and to ocean-going vessels in the Port of Mobile. Our total employment is 350 people.

Warrior & Gulf provides barge transportation on the BWT System for coal (domestic and export), iron ore, grain, iron and steel products (export and import), scrap, gypsum, and various other bulk commodities. With the opening of the new pipe mill and the planned start-up of their large blast furnace during the first quarter of 1985 at Fairfield, Alabama, along with projected increases in coal consumption over the next several years we anticipate greater increases to materialize in our steel, coal and iron ore shipments; thereby, making an efficient and well maintained waterway more important than ever to WGN and the Port of Mobile in our efforts to accommodate the additional demand.

Our company began using the Warrior-Tombigbee Waterway in 1940. During 1982, our capital investment for new equipment approximated $20,000,000 in order for Warrior & Gulf Navigation to continue providing economic water transportation to its customers on this waterway.

The major operating limitations we continue to struggle with are the Oliver Lock and shoaling on the Warrior-Tombigbee System. The fact that Oliver Lock was constructed prior to World War II makes it very unreliable and inefficient to accommodate our six and/or eight barge tows being handled today. With our larger tows we are required to make a double locking at Oliver, whereby our delay time can run as high as 12 to 18 hours awaiting our turn to lock through during these periods of heavy demand. With the projected increases in tonnage on the Warrior-Tombigbee System in the foreseeable future this bottleneck and our delay time can only increase as this lock becomes further saturated. Additionally, the proposed funding to continue the Planning for the new Oliver Lock is $600,000 and, if approved, will permit its orderly completion.

The degree of shoaling varies from season to season dependent upon the length of our high water season (running traditionally from late December through April of each year) and the amount of flooding

that occurs; e.g. during the season where we experience river stages of 60 feet or more for prolonged periods causes the shoaling problem to be more severe. In view of this occurrence, the proposed O&M funding for the Black Warrior-Tombigbee System is $8.4 million, which is more than $4 million below the average of that required over the past five years. For the Port of Mobile, the proposed funding is $1.9 million, which is more than $3 million below the five year average. These are very serious deficiencies and threaten the future of efficient and reliable commerce. To this area, with unemployment still among the highest in the nation and with basic industry still struggling to become competitive and get back on its feet, this would be devastating. This past year it was necessary to await high tide to bring deep draft vessels drawing 40 feet into Mobile Harbor because of severe silting. If Mobile is to continue as a viable port it is mandatory that the ship channel be maintained to a minimum 40 foot draft.

In closing, we wish to state our support for the Corps' budget request for O&M and planning funds for the Black Warrior-Tombigbee and Mobile Harbor; however, we strongly feel additional funds should be made available to (1) provide an adequate O&M program, and (2) to continue the channel improvements. Moreover, Warrior & Gulf Navigation Company is strongly opposed to any attempts to increase the Waterway Users' Tax this year to handle these items, as the continued depressed economic conditions of the inland waterway industry is such that they can no longer afford to absorb these costs nor pass them on to their customers.

We respectfully ask for your continued support and assistance, as your subcommittee considers appropriation of funds for these very important issues concerning the Black Warrior-Tombigbee System and Mobile Harbor.

STATEMENT OF SHELDON L. MORGAN, SENIOR VICE PRESIDENT, MERCHANTS NATIONAL BANK, MOBILE, ALA.

Over the past several years, the Alabama State Docks has invested over $250 million in expanding and modernizing its facilities at the Port of Mobile. This port is a major factor in the economy of Alabama and is predominant in the economy of Mobile. Consequently, we are interested in those factors impacting this economy and, certainly, the Warrior-Tombigbee Waterway is vital in this role. It serves the manufacturing and mining region and all the agricultural areas and industrial production facilities in western Alabama. These interests have, during the same period, invested over $1 billion in waterway-related facilities. The waterway has fulfilled a vital role and served as a stimulant for one hundred years, having been periodically improved until today, it is a modern system with one major exception, the Oliver Lock and Dam, which needs replacing.

This waterway is currently handling most of the coal moving out of Mobile for export. Many basic materials move on this system and it is important that funds for an adequate Operations and Maintenance program be appropriated for the BWT as well as the Corps's requested O&M funds for the Mobile Harbor. The Corps' proposed budget items in these areas are not adequate considering past needs and budgets. We urge the Senate to adequately fund these needs.

The Corps of Engineers' report on the replacement of Oliver Lock has now been approved by the Board of Engineers for Rivers and Harbors. To continue the planning for this replacement, the Corps has requested $600,000 in the budget. It is vital that this continuing process not be interrupted.

The monies we are requesting are a valid investment by the Federal Government, which will continue to be matched many times over by local investment.

STATEMENT OF W. BARRETT NICHOLS, JR., EXECUTIVE VICE PRESIDENT, COAL SYSTEMS SALES, INC.

Coal Systems Company wishes to express it's support for the continued improvement to the Black Warrior River and the Port of Mobile because they are an integral part of the success of the Alabama coal industry and have also contributed to the general wealth of the people of Alabama. Coal Systems Company supports fully the efforts of Mr. Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association as he testifies on our behalf before your Committee.

Coal Systems Company and it's subsidiary mining companies have grown over the last eight years to become the second largest group of surface mining companies in the State of Alabama. Our ability to expand at such a rapid rate has been due primarily to the Black Warrior River which has give Coal Systems the ability to efficiently deliver coal to our customers in both the domestic and international markets.

When Coal Systems began using the Black Warrior River for coal transit in 1977, it was determined that water transportation was a requisite for the coal industry's growth in Alabama. This was also important for the United States because it allowed us to be competitive in the international coal market. In 1984 alone, Coal Systems loaded one million tons or 50% of our total production for transportation on the Black Warrior River.

Coal Systems Company has three rapid loading facilities on the Black Warrior River, two of which operate at a near full capacity. We feel that we must continue to develop and maintain our waterways and upgrade our ports to provide for the efficient movement of coal for the present and most important for the future.

As we at Coal Systems Company look to the future, we see several problems which will hinder the growth and expansion of the Coal industry in Alabama. Although we support the Corps of Engineers request to O & M Funds for the Black Warrior River and the Port of Mobile, we at Coal systems Company believe that additional funds should be made available to provide for adequate planning and completion of the modernization of the Black Warrior River System. By additional funds, we mean at least the same amount of money be supplied and made available to them as in previous years.

A major limitation to the growth of this area is the Oliver Lock which was built in the era of small wooden barges and steam boats. The Oliver Lock must be replaced with a more reliable, standard size lock built for the modern boats and barges on the rivers today and be able to withstand the changes that may occur in future years. This project should be expedited since we have now virtually reached the tonnage capacity of the river.

There in no question that, I as well as every other concerned citizen of the United States, is totally aware of our need to reduce the deficit. Reducing this deficit through an area that has the potential of increasing productivity, revenues and employment for the people not only in Alabama, but other States, does not seem to be the best answer.

Please listen to what Mr. Offa Nichols has to say when he testifies on April 1, 1985. Take note that he represents not only Coal Systems Company and its over 200 employees, but thousands of other United State citizens who are looking forward to and preparing for the coal industry's economy and growth in Alabama.

STATEMENT OF JAMES A. JACKSON, MARKETING MANAGER, THOMPSON TRACTOR CO., INC.

Thompson Tractor Company is the Caterpillar dealer for North Alabama, and we sell and service heavy equipment, material handling equipment, and diesel engines for trucks, boats and for both prime power and stand-by applications. Our products and people can be found at work virtually anywhere materials must be moved, from coal to grain to chemicals to manufactured goods. Since the impact of an efficient waterway system is of vital importance to the Alabama economy and the customers we serve, Thompson Tractor Company and its 450 employees have a vested interest in the efficiency and reliability of the Warrior-Tombigbee Waterway.

One of our major markets is the coal industry. Alabama coal producers have been more active in international trade in recent years as foreign markets have been developed. In 1984, seventy percent of the eight million tons of coal exported through the Port of Mobile arrived there by barge shipment; 4,229 barges of coal were processed.

Other major Alabama industries served by Thompson Tractor also depend on a cost efficient system of water transportation. Products such as grain, metallic ores, pulp, paper and paper products, and chemicals are commonly shipped via inland waterways to both domestic and foreign destinations. As export markets for Alabama products continue to grow so does the importance of water transport. And increasing export business is important as it contributes to our international balance of trade.

With respect to funding we support the Corps of Engineers budget request but are very concerned that the proposed funding is inadequate. Neither the BWT operating and maintenance budget or the Port of Mobile proposed budget appear adequate in comparison to historical funding levels. The proposed BWT O&M budget is $4 million or 33% lower than the average of the last five years and the Port of Mobile proposed funding represents a level of only about 40% of the average for the same time frame. Without an increase in funding there is a serious question regarding the immediate future of efficient and reliable water transportation on this vital waterway link. Regarding Oliver Lock we feel that the proposed funding of $600,000 to complete planning should be approved thereby providing for its orderly completion.

Obviously, the efficient operation and continuing improvement of our inland waterway system have far-reaching implications for the Alabama economy and particularly the industries we serve. We ask that you join with us in support of the Corp's budget request for O&M for the BWT and Mobile Harbor while seeking increased funding to provide for <u>normal</u> operation and maintenance.

In concern for the continued development of the Warrior-Tombigbee Waterway, Thompson Tractor Co., Inc. offers this statement in support of the scheduled April 1 testimony of Offa S. Nichols, President of the Warrior-Tombigbee Development Association. Realizing that our river system is energy efficient and plays a crucial role in local, national and international trade, we at Thompson Tractor Company pledge our ongoing support of its continued development.

STATEMENT OF CHARLES W. ADAIR, BIRMINGHAM, ALA.

The Warrior-Tombigbee River system is an essential thoroughfare of commerce for many Alabama industries, particularly the coal industry, which ships about one-fourth of its total tonnage by waterways. Its efficient operation, proper maintenance, and continued improvement is vital to the economic well-being of this area. Alabama By-Products Corporation joins with the Warrior-Tombigbee Development Association in encouraging your committee to give favorable consideration to adequate appropriations for this purpose.

Our company is engaged in coal mining and by-product coke manufacturing in Jefferson and Walker Counties in Alabama. We now operate five underground coal mines, one surface mine, and the largest merchant foundry coke plant in the United States. We have approximately 2,500 employees. Our land holdings include 62,000 acres of property owned in fee simple, 70,000 additional acres of mineral rights only, and 8,000 acres of surface ownership. Large blocks of these lands contain coal reserves as yet undeveloped and are accessible to the Warrior River. These coal resources represent our potential for future growth in operations and employees. Our coal markets are regional, to electric utilities and industrial customers, and international, through the Port of Mobile. Our coke market is primarily national, but also includes some exports.

In 1984, ABC produced 4.3 million tons of coal and about 10% of this amount was transported on the Warrior-Tombigbee system. As you know, the export market for coal has been depressed considerably since the peak years of 1981 and 1982. When the recovery does occur, this valuable trade-balancing commodity must move through the Warrior-Tombigbee to the Port of Mobile. It is essential that a reliable barge transportation route be ready to handle the traffic.

As you consider appropriations for the Corps of Engineers budget, please note that the proposed funding for Operation and Maintenance of the Warrior-Tombigbee is $8.4 million, which is approximately $5 million below the average of what has actually been required for this item for the past five years. This proposal would also not permit the continuation of several projects already underway that are designed to improve channel efficiency and reduce future costs. Similarly, the Port of Mobile Operation and Maintenance budget is proposed to be $1.9 million, or some $3 million below the five-year average. This funding at a fraction of actual recent experience will have immediate effects on operations and could be disastrous to the long-term health of the waterway and its users. I strongly urge you to increase this inadequate appropriation.

The Corps is also requesting $600,000 for continued planning and engineering for the new Oliver Lock. It is essential that this money be made available so that the orderly process can continue toward replacement of the present antiquated facility with a standard-size lock to complete the modernization of the river.

We share with the President and the Congress the conviction that government spending must be carefully controlled in order to reduce the deficit. But control must not jeopardize the flow of commerce that must occur in order to produce the tax revenues that are also necessary in deficit reduction.

We appreciate your interest in this area, and invite your attention to these needs to improve its economy.

STATEMENT OF R.A. GUTHANS, PRESIDENT, TENN-TOM TOWING, INC.

As a member and director of the Warrior-Tombigbee Development Association, as well as a daily user of the Warrior-Tombigbee Waterway, we wholeheartedly support the testimony given by the President of the Warrior-Tombigbee Development Association, Offa S. Nichols, Jr.

The importance of the waterway and its impact on, not only local, but national and international trade cannot be overemphasized. Historically, the Warrior-Tombigbee Waterway has been one of the most reliable navigation systems in the nation, but only through the continuing efforts of the Corps of Engineers' operation and maintenance program will it be able to maintain this status. If the waterway is to continue as one of the most economical and energy efficient means of transportation, it, by necessity, has to be properly maintained and controlled through its locks and dams in order to assure its reliability.

The proposed funding of only $8.4 million for the Corps O & M budget of the Warrior-Tombigbee Waterway System is more than $4 million below the average of that required over the past five years. In addition to this problem I understand the proposed funding for the Port of Mobile is only $1.9 million, which is more than $3 million below the five year average. These are very serious deficiencies and threaten the future of efficient and reliable commerce. While we urge the approval of these funds as requested, we feel very strongly that additional funds should be made available so the O & M program can continue the channel improvements that are absolutely necessary for the continuing reliability of the Warrior-Tombigbee and Mobile Harbor. The continued development and growth of the Port of Mobile depends vitally on the efficiency and reliability of the Warrior-Tombigbee Waterways, which in turn connects this system with all national and international ports.

The proposed funding of $600,000 to not only continue but to complete the planning for the new Oliver Lock is urgently needed. These funds are necessary in order that the replacement of this sub-standard size lock may proceed.

During the past twenty-five (25) years, I have been associated with companies utilizing the Warrior-Tombigbee Waterway to transport sand, gravel, shell and petroleum products. We presently utilize the entire length of the Warrior-Tombigbee Waterway hauling petroleum products from Mobile to the Port of Birmingham, Tuscaloosa and Demopolis and return products from Tuscaloosa and other terminals along the Warrior-Tombigbee to other ports, including the ports of Mobile, Alabama, New Orleans and Lake Charles, Louisiana and Houston and Port Arthur, Texas. Without the constant operations and maintenance performed by the U. S. Corps of Engineers, it would not be possible for the barge traffic industry to continue to grow and provide this country with the most economical and energy efficient mode of transportation available today.

The importance and necessity of maintaining this waterway and the Port of Mobile cannot be over-emphasized. We must consider the impact that the already opened Tenn-Tom Waterway System, connecting the Warrior-Tombigbee with 16,000 miles of navigable waterways through out the United States, offering unlimited opportunities and advantages for both shippers and transporters alike throughout the entire country.

We appreciate the opportunity of expressing our views on the Warrior-Tombigbee Waterway System and the Port of Mobile and want to thank you for your cooperation in the past and continued interest for the future of all waterways in our nation.

Statement of Jerome Drummond, Director of Port Operations, Drummond Coal Co.

The following is a statement in support of improving the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile.

Drummond Coal Company was founded in 1935 by Mr. Heman Drummond who developed his first mine underground near Sipsey, Alabama. It was a drift mine, angling into a hillside from which men dug and mules hauled the bituminous Appalachian coal. Many of Mr. Drummond's customers were local people who needed coal for home heat. As his sons grew up, they joined him and the family opened their first surface mine using small diesel shovels. Half a century as passed since Mr. Drummond produced his first ton of coal.

Today, Alabama is a major coal producing and exporting state. Drummond Coal Company is the largest surface coal producer, one of the largest coal exporters in the southeastern United States, and one of the top twenty non-captive bituminous coal producers in the nations. Drummond serves metallurgial, utility and specialty coal customers on four continents from mines in six counties in north central Alabama.

Drummond Coal Company alone presently employs in excess of 1,500 people with an annual payroll of approximately $52,000,000. Alabama By-Products, a subsidiary company, employs another 2,500 people with an annual payroll of approximately $80,000,000.

About 90% of the state's coal production, including most of Drummond's, comes from the Warrior Field located in north central Alabama. The Warrior Field or Warrior Basin as it is also known, is a basin-like geological structure covering more than 3,500 square miles and underlying parts of Winston, Marion, Fayette, Tuscaloosa, Cullman, Blount, Jefferson and all of Walker County. The field is cut through by the Warrior River system which has led to th development of mines using water transport.

Alabama's system of riverways offers water transport of national and international destinations via the McDuffie Coal Terminal at the year-round Port of Mobile on Alabama's Gulf Coast. Barging in Alabama is a particularly good way to move coal because of the extent of Alabama's waterways and because of the coal handling facilities available.

Drummond ships this coal from five different coal loading facilities located at various points on the Warrior River system, two of which are company owned and operated. Drummond owns and operates a barge loading facility located at milepost 354 on the Warrior River in conjuction with its Kellerman mining operation. This barge loading facility handles about 1,400,000 tons of production at the Kellerman Mine and 2,000,000 tons of production for the Jim Walter Corporation. Another company owned barge loaidng facility is located at milemport 401.5 on the Locust Fork portion of the Warrior River in conjuction with Drummond's Short Creek operation. This barge loading facility has the potential to handle approximately 1,000,000 tons per year at Port Birmingham which is located at milepost 399 on the Warrior River.

Obviously, reliance upon Alabama's efficient system of waterways has been a very integral part of Drummond Coal Company's planning and operations to date. Availability of an economical and efficient mode of transportation is important to any industry in getting the product to market; however, because of the national and tnternatioanal merkets for coal, efficient transportation modes are even more critically important to the coal industry.

This reliance by Drummond Coal Company on the Warrior-Tombigbee System and the Port of Mobile is seriously threatened by the 1985 fiscal year budget proposals for the Corps of Engineers. Reduced operation and maintenance for the Warrior-Tombigbee would be crippling for the coal industry in Alabama. The amount planned for the O & M money for the Warrior-Tombigbee is inadequate based on past history of the water system. Only 8.4 million dollars

is proposed and this is more than 4 million dollars below the average that was required over the past five years. The proposed funding for the Port of Mobile in only 1.9 million dollars, some 3 million dollars less than the average for the past five years. These deficiencies threaten the growth and reliability of one of the largest employers in the state of Alabama.

By transporting its high quality coal product by an available and efficient waterway system, Drummond has been able to compete with other coal exporting nations in a successful manner and has contributed to reducing the current national trade deficit. Handicapping the Warrior-Tombigbee River System with reduced operation and maintenance will undoubtedly cause Drummond to lose possibly lead to a reduction in the need for our product. Of course, this would only result in negative impacts on both our employment level and the economy of the region in general.

To date, significant delays are caused in the efficient movement of traffic on the Warrior-Tombigbee System by use of the small, pre-World War II Oliver Lock located on the Warrior River. Because this lock is able to handle only a four barge tow, this necessitates having to break down the barge configuration prior to moving through this lock which, even with a six barge tow, amounts to doubleing the lockage time necessary to move through this lock. This one lock alone creates a bottleneck in the orderly flow of traffic on the Warrior-Tombigbee System. Sufficient planning funds to continue uninterrupted progress toward the replacement of Oliver Lock with a reliable standard-sized lock are needed in the fiscal 1985 budget for the Corps of Engineers.

Drummond Coal Company is a member of the Warrior-Tombigbee Development Association. We strongly support the testimony given today by Mr. Offa S. Nichols, Jr., President of the Association, and heartily endorse the collective effort of the Association to improve the efficiency and reliability of the Warrior-Tombigbee Waterway. Traffic on the waterway presently represents only a small percentage of the river's ultimate capacity; given the needed improvements to the Oliver Lock and a continued commitment to a federally constructed and maintained inland waterway system are granted. Certainly, the federal investment is the Warrior-Tombigbee River System has paid dividends many times over with the improved economic development is the area which the Warrior-Tombigbee River System serves.

STATEMENT OF C.T. ESTOCK, PLANT MANAGER, CHICAGO BRIDGE & IRON CO.

For many years CBI has participated in efforts to improve the efficiency and reliability of the Warrior-Tombigbee Waterways because of the resulting lower freight rates for our products and efficiency in energy consumption.

We have a multimillion dollar fabricating facility on the Warrior River in Cordova, Alabama, which was opened in 1974. The plant is equipped to fabricate, machine, weld, test and load onto barges extremely large and heavy steel vessels for use in the nuclear and petroleum industries, as well as other fields, such as chemical processing, pulp and paper, water and waste treatment and water storage. The market decline in the nuclear and oil refining industries compelled us to close the plant for several years. We're now operating it on a limited basis and hope that we will be using it much more in the future as the economy expands.

We support the budget requests of the Corps of Engineers for the BWT and Mobile Harbor for O&M and Planning funds; however, we feel that additional funds should be made available to provide an adequate O&M program and to continue channel improvements. Unemployment in our area is among the highest in the nation and, with basic industry still struggling to become competitive and get back on its feet, it is important to support efficient and reliable commerce.

We support the testimony to be given by Mr. O. S. Nichols, Jr., President of the Warrior-Tombigee Development Association, and solicit your support in providing the necessary funding for the Warrior-Tombigbee Waterway and the Port of Mobile.

STATEMENT OF LEE R. SEIFERT, PRESIDENT, AMSOUTH BANK INTERNATIONAL

As President and Manager of an Edge bank in Mobile which offers only international banking services, I know the importance and necessity to the international trader of an efficient and reliable waterway and port.

Alabama is blessed with waterways which are interwoven with its economy and the well being of its people. But, despite the many natural resources of Alabama, the state is plagued with high unemployment which can be reduced through the increased commerce of its port and waterways. The benefits of lower costs through efficient and reliable port facilities and waterways can attract this commerce. Such benefits to the foreign and domestic trader will help to offset the effects of our strong dollar which has caused our goods to be overpriced in world markets.

It is for these reasons that I am active in organizations and associations that work to achieve a good future of our waterways systems and therefore, support wholeheartedly the statement and testimony to be given before your committee by Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association of which I am a Director.

President Nichols will present to your committee the reasons why it is important and essential that the proposed funding is not adequate for an effective operation and maintenance program for the Warrior-Tombigbee Waterway or the Port of Mobile. The funding of $8,400,000.00 for the waterway is far below (more than $4 million) of the average required over the past five years. And the proposal of funding for the Port of Mobile of some $1,900,000.00 is inadequate for an effective operation and maintenance progam and is more than $3 million below the five year averages. These proposals for funding of the waterway and the port must be brought up to the level where one of the most essential ways for the movement of commerce will be serviceable as an efficient and a reliable means of movement of goods and commodities.

STATEMENT OF DON RUSSELL, PRESIDENT, RUSSELL COAL INC.

As a member of the Warrior-Tombigbee Development Association, we at Russell Coal Incorporated strongly support the efforts of our president, Offa S. Nichols, Jr., on our behalf.

We urge that you pay particular attention to his testimony in support of FY86 funding for Warrior-Tombigbee Waterway and the Port of Mobile.

While we do not have any operations on the waterway system, our coal does make its way downriver as part of comingled barge loads to commercial customers. It is essential to the people of Walker County with coal mining as the backbone of its economy, that the waterway continues to be the viable mode of transportation that we have come to expect.

To that end, it is critical that the operations, maintenance and expansion of the system are not degraded in any way. The proposed O&M funding for the waterway is $8.4 million, over $4 million less than the average for the past five years, wholly inadequate. For the Port of Mobile the same is true, with a proposed funding of $1.9 million, which is more than $3 million below the average of the last five years. These shortages are very serious and threaten the future of the waterway's contribution to efficient and reliable commerce.

Finally, we urge you to accept the Corps of Engineers' budget request for O&M and planning funds for the waterway system and Mobile Harbor and ask that additional funds be made available to provide an adequate O&M program and to continue the channel improvements.

STATEMENT OF NORMAN S. IVEY, VICE PRESIDENT, AMERICAN COMMERCIAL BARGE LINE CO.

I am writing on behalf of American Commercial Barge Line Company to express our support of the Warrior-Tombigbee project and to suggest increases in the operating budget for the Corps of Engineers. As you may know, our company operates a fleet of towboats and barges on the inland river and canal system. We provide a cost effective transportation link between America's inland industries and its foreign shipping ports. One of the waterways upon which we operate is the Warrior-Tombigbee system which flows to the port of Mobile, Alabama. Our current operation in this area includes transporting coal from Holt, Alabama, Port Osborne, Alabama, and Coal Systems Inc. dock at Mile 372 on the Warrior River to Gulfport, Mississippi. We project shipments of coal and chemicals on this river system totaling over 1.3 million tons in 1985. For many years, the Warrior-Tombigbee system was limited to four barge tows because of narrow channels, rocky bottoms, and old inefficient locks. Recent improvements in the waterway have expanded the river to six barge tow capacity. These improvements have drastically increased our company's efficiency and consequently lowered the cost per ton of material moved. Continued channel maintenance and replacement of Oliver Lock will allow our company and others to provide cost efficient, reliable transportation of commodities through the Port of Mobile. We actively support the efforts of the Warrior-Tombigbee Association because we feel its work is of great importance to the Port of Mobile, the Gulf Region of the United States, and the country as a whole. We urge your subcommittee to carefully consider and highly credit the testimony of the Association's President, Mr. Offa S. Nichols. Our company applauds the efforts currently being made by the Federal Government to reduce waste and trim the budget. We must caution, however, that the transportation links of our nation must not only remain strong, but they must continue to grow and improve to keep abreast of foreign competitors. The health of American industry depends on its ability to be cost competitive.

This brings up the matter of the proposed Corps of Engineers budget for Fiscal Year 1986. While we support the Corps' budget request, we feel the funds allotted are inadequate for proper operations and maintenance of the Warrior-Tombigbee river system.

The proposed O & M budget is $4 million below the average cost over the last five years. Likewise, the proposed funding for the Port of Mobile is $3 million below the previous five year average. Certainly in a locale where the level of unemployment is among the highest in the nation, any increases in the O & M budgets for these two projects would be money well spent. Reductions in the Federal Budget that fail to provide minimum essential funds for operations and maintenance of our waterways of that slow progress toward replacing outdated locks on our nation's rivers would most surely be counterproductive to the goals of the present administration and our nation's continued economic recovery.

We hope you will carefully consider the comments made in this letter, and if we can be of further assistance to your subcommittee, do not hesitate to contact our company.

LETTER FROM W.J. HEARIN, PUBLISHER, MOBILE PRESS REGISTER

February 25, 1985

Honorable Mark Hatfield, Chairman
Subcommittee on Appropriations for
Energy and Water Development
United States Senate
Washington, D. C. 20510

Dear Senator Hatfield:

This letter is written as a demonstration of my support of the improved efficiency of the Warrior-Tombigbee Waterway and as a statement of my conviction that its importance to this area cannot be overstated.

Although I will not be able to appear in person before the Appropriations Committee on April 1, 1985, Mr. Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association, will appear before the Committee and will present to you the consensus of the ever-widening Warrior-Tombigbee support group.

I want to go on record as having been a proponent of the Warrior-Tombigbee project for many years and as continuing to be convinced of its importance to the Port of Mobile and to the State of Alabama as a whole. I heartily concur with Mr. Nichols' presentation to you, both as to support of the Warrior-Tombigbee and to the need of an increase in the Corps of Engineers' budget request, for reasons Mr. Nichols will make abundantly clear.

Your consideration of this letter is greatly appreciated.

Sincerely,

W. J. Hearin

W. J. Hearin, Publisher

Statement of T. Keith King, President, David Volkert & Associates, Inc.

David Volkert & Associates, Inc., one of the largest design engineering/architectural/planning firms in the State of Alabama, wishes to make known its support of the Warrior-Tombigbee project and the efforts extended by the Warrior-Tombigbee Association to restore funding to adequate levels.

With offices located in Mobile and Birmingham, David Volkert & Associates, Inc. is aware of the importance of the Warrior-Tombigbee Waterway, not only to our company, which employs over 200 people, but to our state and nation as a whole. Since Mobile's largest industry is its port, the further development of this Waterway would not only add to Mobile's commerce and industry, fueling monies into its economy and providing needed jobs for its people, who still suffer from the highest rate of unemployment in the South; but would also improve the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile. This improved capability and reliability would allow for lower operating costs, higher energy efficiency, and added importance to local, national and international trade. With the shipments of coal, iron ore, farm products, and related products expected to triple this year, the Warrior-Tombigbee is increasingly important to maintain the serviceability of our waterway system. Confidence in the Waterway and its efficiency and modernization are important in bringing new industry to this area; for example, U.S. Steel's decision to reopen and modernize its Fairfield facilities. Farmers in 21 counties ship their grain to Mobile on this Waterway for export. To the Mobile area, with unemployment still ranking among the highest in the nation and with basic industry still struggling to become competitive and back on its feet, the modernization of the Waterway is essential. Lower operating costs to users of the Waterway and Port are essential to obtain a reasonable balance of the international export market allowing the U.S. to reduce our trade deficit. Increases in shipping and commerce result in opportunities for many companies similiar to DV&A to obtain business and offer meaningful employment to citizens of the State of Alabama and other parts of the country.

Although we support the Corps of Engineers' budget request for the Warrior-Tombigbee and Mobile Harbor for O&M and planning funds, we feel additional funds should be made available to provide an adequate program and to continue the channel improvements.

We appreciate this opportunity to express to you our support of Col. Nichols, President of Warrior-Tombigbee Development Association, and the testimony to be given by him before the Appropriations Committees of the Senate and House. We are proud to join in the collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile.

Statement of G.W. James III, Dredging Division Manager, T.L. James & Co.

T. L. James & Company, Inc. is a diversified construction company that owns and operates eight hydraulic cutter-suction dredges along the inland waterways of the Gulf Coast Region. Our Company supports the funding request by the Warrior-Tombigbee Development Association, for the Army Corps of Engineers' Operations and Maintenance Budget in fiscal year 1986. Our reasons are outlined in the following paragraphs.

The Army Corps of Engineers' Operations and Maintenance Budget is an important barometer of the economic health of our company, as well as the national dredging industry. Recent cuts in the Corps of Engineers' "O & M" budget have severely impacted the economic health of the dredging industry, an essential national defense industry. Our company lends its support to the efforts being made to return this essential industry to its former strength.

Second, I would like to focus your attention on the fact that the Dredging industry is only one segment of the regional economy that has suffered due to "O & M" budget cuts. Approximately 75% of the revenue from a dredging contract is funneled into the economy of the local community. An additional 10% of our revenue benefits the economy of our home port. Much of the labor employed on our equipment is provided from the local workforce of nearby communities. A payroll account is usually handled by a local bank. Local fuel and hardware suppliers receive approximately half of our revenues in the form of local purchases of those items. It is clear that "O & M" budget cuts impact the health of many other industries in the economy of the communities affected.

A safe and reliable Black Warrior, Tombigbee and Alabama River transportation network is of paramount importance to the water-borne commerce on that network, as well as the health of the regional economy in general. I hope I have clearly outlined for you, from our perspective, the importance to us of the efforts put forth by the Warrior-Tombigbee Development Association concerning the Army Corps of Engineers "O & M" budget for fiscal year 1986.

STATEMENT OF WILLIAM H. HARRISON III, HARRISON BROTHERS. DRY DOCK AND REPAIR YARD, INC.

I heartily support all aspects of the Warrior-Tombigbee Project because of its significant impact upon both my community as well as my business. My city of Mobile has experienced significant economic difficulties due to the waterway-related recession of the last few years, and this has had profound impact on all aspects of the Mobile community. We have had devastating cutbacks in our labor force, reductions in the general commerce of our city, and less of a sense that our port provides a valuable service to our nation. In regard to my business, Harrison Brothers Dry Dock and Repair Yard has been in continuous operation since 1895 and we have weathered through the boom years of the past as well as through the recession years. Fortunately, we have enjoyed an industry which has required very little government financial support when compared to other transportation industries such as the railroads, and we feel we have been able to provide a valuable service to the free enterprise of Mobile. While effective management and a willingness of our labor force to be highly cooperative with the difficulties of these times have resulted in our being able to financially survive the last several years, we have been hard hit by a recession of inordinate magnitude when compared with other modes of transportation and commerce.

The Warrior-Tombigbee Waterway is a crucial resource to our business, and funding which would provide for effective operations and maintenance of this waterway is essential. Unfortunately, the funding for the Corps of Engineers is not adequate for effective Operations & Maintenance Program, because the $8.4 million proposed for the O & M funding can easily be shown inadequate when compared with the funding needed over the last five years. In regard to the Port of Mobile, the proposed $1.9 million is also well below the average funding required over the last five years. While I fully support funding for the Corps of Engineers Operations & Maintenance Programs of the Warrior-Tombigbee Waterway and of the Port of Mobile, I strongly feel that additional funds are necessary for effective future operations which could be vital to the waterway industry in our area. It appears that much of the financial future of Mobile hinges on this waterway, and that adequate financial support for its operations could be a vital sign to our community that we have the support of our nation's government. I strongly urge your consideration of this matter.

Thank you.

STATEMENT OF TIM PARKER, JR., PARKER TOWING CO., INC.

My name is Tim Parker Jr., and I am Executive Vice-President of Parker Towing Company, Inc. I wholeheartedly endorse and support the testimony of Colonel Offa Nichols, President of the Warrior-Tombigbee Development Association. I join with him and other members of the Warrior-Tombigbee Development Association in efforts to improve the efficiency and reliability of the Warrior-Tombigbee Waterway.

Parker Towing Company operates a fleet of one hundred thirty (130) hopper barges, fifteen (15) towboats and four (4) tank barges. We have been providing barge transportation service to shippers on the Warrior-Tombigbee Waterway for almost fifty (50) years.

The Warrior-Tombigbee Waterway and Port of Mobile are not only important to my Company and industry, but it is a vital part of the economic well being of Alabama. Most of the coal exported from Alabama, through the Port of Mobile, moves to Mobile via the river. Agricultural products, primarily soybeans, also move in considerable volume via the Warrior-Tombigbee Waterway for export. On almost any given day, you will find a wide variety of items being shipped by barge including not only coal and agricultural commodities, but also forest products, iron and steel articles, petroleum and chemical products, paper products and cement, just to name a few. This broad spectrum of products shipped on the Warrior-Tombigbee Waterway clearly indicates the widespread economic impact that this waterway has on business in Alabama.

As a member of the Warrior-Tombigbee Development Association, I support the U. S. Army Corps of Engineer's Operations and Maintenance (O &M) budget, but I respectfully request that additional funds should be made available to insure both an adequate O & M program as well as channel improvement work. Sufficient funding for O & M and channel improvement will lead to continued competitive barge transportation costs for Alabama shippers. Anything that we can do to make these shippers more competitive will lead to increased activity by our area's industry and to increased employment.

In closing, let me reiterate that the operation of the Warrior-Tombigbee Waterway is of great importance to not only myself and my firm, but to the people of our region.

STATEMENT OF JOSEPH M. FARLEY, PRESIDENT, ALABAMA POWER CO.

The Warrior-Tombigbee Waterway is a vital part of the foundation to the economic health of Alabama. Alabama's water transportation system is important to economic growth, and it must be efficient and well-maintained if the basic industries such as mining and heavy metals are to provide a sound economic base for the people of Alabama.

Alabama Power Company's continued interest in the Warrior-Tombigbee Waterway is two-fold. First, our business is dependent on the general economic health of the state; and, second, we are a primary user of the waterway. For nearly three decades, we have used economical water transportation to deliver coal to two of our major electric-generating plants.

Four of Alabama Power Company's seven fossil-fueled, electric-generating plants are located on the Warrior-Tombigbee Waterway system. Coal from the Warrior coal field is delivered to two plants near the coal field and loaded onto barges for shipment to two generating plants in the southern and central parts of Alabama. The 1,525-megawatt Plant Barry in Mobile County, which began operation in 1954, is supplied primarily by the Warrior-Tombigbee Waterway, as is the 500-megawatt Plant Greene County near Demopolis.

We have two major concerns about the Warrior Tombigbee Waterway. The pre-World War II Oliver Lock's capacity is inadequate, and this creates a bottleneck which impedes efficient operations on the river. It must be replaced. We have learned, through extensive experience, that thorough planning and maintenance are necessary to avoid expensive and unnecessary interruptions to river traffic. Adequate funds must be made available to the Corps of Engineers to maintain the waterway through dredging and other work.

Alabama Power Company received 4,868,000 tons of coal in 1984 which were transported on the Warrior-Tombigbee Waterway. This represented 39 percent of the 12,431,000 tons used to generate electricity for our customer's use. Failure to replace Oliver Lock or to properly maintain the waterway can have a significant adverse effect on the cost of providing electric service to Alabama Power Company's over 1,000,000 customers.

Alabama Power Company supports the collective effort of the Warrior-Tombigbee Development Association, of which it is a member, to obtain the replacement of Oliver Lock and to obtain for the Corps of Engineers an adequate operations and maintenance budget which will ensure the long-term, efficient and economical viability of the waterway.

STATEMENT OF CHARLES R. LOWMAN, GENERAL MANAGER, ALABAMA ELECTRIC COOPERATIVE, INC.

Alabama Electric Cooperative, Inc. (AEC), with its headquarters in Andalusia, Alabama, generates and transmits electrical energy to its twenty-two member-owners throughout Central and South Alabama and the panhandle of Northwest Florida. These member-owners are comprised of sixteen rural electric cooperatives, four municipalities and two industries. In-turn, these member-owners furnish power to homes, farms, commercial and industrial establishments of more than 500,000 consumers. The area served is predominantly agricultural/ forest related and is sparsely populated. The agricultural/ forest related industry in this area is lagging behind and has not experienced the rate of recovery the rest of the U.S. economy has enjoyed. As a result, the unemployment rates in some of the areas served by AEC's member-owners are among the highest in the Nation.

Two coal-fired generating plants, two small hydro plants, and one gas turbine make-up AEC's generating capacity. AEC's largest generating plant (Tombigbee Plant) is located at mile point 89 on the Black Warrior-Tombigbee Waterway (BWT). It can receive coal via barge and rail. The 1985 estimated burn for the Tombigbee Plant is 940,000 tons of which 520,000 tons will be transported by barge on the BWT. The rail transportation cost is 49% greater than the transportation cost for the barge coal delivered to this Plant.

AEC's fuel cost constitutes approximately 32% of its operating cost and the member-owners are paying a higher cost for electrical energy than their city counterparts. Therefore, the efficient and reliable operation of the BWT is of upmost importance to AEC and its member-owners.

AEC's first generating unit (75 MW) installed on the BWT went into commercial operation in 1969, and it was followed by two 235 MW units in 1978 and 1979. As previously mentioned, it is estimated that 520,000 tons of coal will be moved by barge via the BWT to the Tombigbee Plant in 1985. AEC, almost without exception, has increased the tonnage moved via barge on the BWT every year since 1969. Because the BWT offers the most cost-effective mode of transportation, this trend will continue for the foreseeable future. AEC has also selected a site on the BWT in Choctaw County, Alabama for the location of its next fossil fired generating plant. It is now projected that this plant will be needed sometime in the mid-1990's. This plant will burn approximately three million tons of coal per year and will possibly be delivered via the BWT.

The Tombigbee Plant is located down stream of the last lock and dam (Coffeeville) and on the back side of a 90 degree bend on the BWT. Consequently high water and the silting in of the barge ship limits the average available time that barges can be unloaded to ten months out of the year at the Tombigbee Plant. This is to point out that even with the past level of funding there are on the average two months during the year that coal cannot be received at the Tombigbee Plant. With the proposed O&M funding for the BWT being approximately $4 million below the average of what has been required over

the past five years, AEC is concerned that there will be additional time when coal cannot be received by barge at the Tombigbee Plant. This,in turn, will increase AEC's transportation cost and ultimately the cost of electrical energy to the member-owners who are in an area where unemployment still is among the highest in the nation and with its basic industry still struggling to become competitive.

The old substandard size Oliver Lock on the BWT is detrimental to the efficient operation of the waterway and as the volume of traffic increases its need for replacement becomes even more significant. This not only impacts AEC but the entire electric utility industry in South Alabama, Southern Mississippi and Northwest Florida. The proposed funding for continued planning for the replacement of the Oliver Lock needs to be sustained so that an orderly and timely completion of this project can be accomplished.

AEC supports the Corps of Engineers' budget request for O&M and planning funds for the BWT and the Port of Mobile, but feels additional funds should be made available to provide an adequate O&M program and to continue the channel improvements. An efficient and reliable BWT and Port of Mobile will help to make our nation's products more competitive abroad which will assist in equalizing the balance of trade and create more jobs at home. Where is there a better chance for our tax dollar to help so many?

As a member of the Warrior-Tombigbee Development Association, AEC supports the Associations efforts to improve the efficiency and reliability of the BWT and the Port of Mobile and concures with the testimony of the Association's President, Offa S. Nichols, Jr., before your subcommittee.

STATEMENT OF GEORGE S. SHIRLEY, PRESIDENT, FIRST NATIONAL BANK OF TUSKALOOSA

I am writing to request that you and your Committee continue to give your support to the Warrior-Tombigbee Waterway project and to the development of the Port of Mobile. An efficient and reliable waterway system is very important to the future economic growth of Tuscaloosa and Tuscaloosa County. Our economy depends heavily on farm products, iron ore, coal and petroleum products that are shipped from this area and adjacent counties.

I hope that your Committee will give full support to the Corps of Engineers' budget request for its Operating and Maintenance Budget as well as funds requested for the Port of Mobile. I also hope that you will consider additional funds for the O&M budget as I feel the funds that have been requested will be inadequate. It is my understanding that the average funds required over the past five years have been substantially higher than those requested.

The continued development of the Warrior-Tombigbee Waterway is vital to a large part of the State of Alabama, and I trust that your Committee will see fit to continue its support.

STATEMENT OF ROBERT M. HOPE, DIRECTOR, ALABAMA STATE DOCKS DEPARTMENT

The Alabama State Docks Department would again this year like to express its appreciation to this Subcommittee with respect to its energies and dedications with regard to your diligent and enduring support of our nation's great Waterway Systems, and to once again recognize the value of these annual hearings on behalf of one of America's greatest assets.

As we have advised this committee before, over the last eight years the Alabama State Docks Department has been involved in a program of complete renovation of its existing facilities as well as major expansions and the creation of new terminaling facilities for handling economically and efficiently our country's international business. During this period the Department has expended $250 million in renovation, refurbishing and new construction projects. All of these programs are now completed.

The Department's Bulk handling operations at the Port of Mobile and at the Alabama State Docks are vital to the State of Alabama as well as the Mid-America region of the United States, and together with our inland waterway system function as an expedient and cost effective means of shipping products produced and manufactured in the State of Alabama into world-wide markets. Volume shipments of grain move annually from inland elevators located on the Warrior-Tombigbee Waterway by barge to the Port of Mobile for subsequent export to consuming nations around the world, and the system acts as a major conduit for large annual coal volumes which are moved to the Port of Mobile and handled through the Department's McDuffie Export Coal Handling Plant.

Major shipments of bulk ores are handled through the Department's Bulk Material Handling Plant and a large percentage of this tonnage moves on the Waterway System.

The highly competitive posture of the Alabama State Docks and the Port of Mobile is a direct result of the Port's enviable inland transportation infrastructure. Four major rail lines serve the Port of Mobile; however, it is the State's inland river system that continually gives the Port its competitive edge.

Although the State of Alabama is blessed with 2,000 miles of navigable waterway and the new Tennessee-Tombigbee Waterway has just been completed, the Warrior-Tombigbee is still the heavier utilized system in the State at this time and constitutes a major transportation artery for coal, iron ore, and grain.

This Waterway, its operation and maintenance are of vital importance to the Alabama State Docks, the Port of Mobile as well as the State of Alabama. The restraint on the Waterway at this time exists in the Oliver Lock and the continuance of an expedited study to replace the Lock is imperative. Funds to continue the planning for the new Oliver Lock must be approved in order to permit its orderly completion.

The proposed operation and maintenance funding for the Black-Warrior-Tombigbee System is $8.4 million, which is more than $4 million below the average that has been required to operate the System over the past five years. We would respectfully request that this Subcommittee take appropriate action to adequately fund the operation and maintenance of this highly utilized Waterway System in view of the continuing escalation of traffic originating and terminating on the System, as well as the initial surge and subsequent perpetuation of traffic in-

fluenced by the newly completed Tennessee-Tombigbee System.

Mr. Chairman, the Alabama State Docks Department appreciates the opportunity to appear before this Subcommittee today, and we are grateful for the time and consideration of the Committee. The Department in concert with the Warrior-Tombigbee Development Association and the Governor of the State of Alabama offers its support for the testimony of Mr. Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association.

Not only is this Waterway vital to the interests of Alabama in that it provides an economic mode of transportation, it also has the national effect through the movement of export coal and grains of offering this country vital assistance in bringing into balance our deficit in trade and payments. The River System is energy efficient and constitutes an integral part in local, national and international trade, and we at the Alabama State Docks Department pledge our unerring support to its continued development.

STATEMENT OF JAMES C. LEE, JR., CHAIRMAN OF THE BOARD, BUFFALO ROCK CO.

Over the past several years, we have made substantial investments in the Mobile area, as well as in other places in the southeast. The fact that the potential development of Warrior-Tombigbee should be a very economically stimulating occurrence for the area was taken into consideration on our decisions to make these investments. Whether you are actually using the waterways or not, it is important that it be available to assure substantial savings to businesses by having true competition in the transportation industries.

We are a large purchaser of supplies in our State and I can well imagine that this water project is playing an important part in the manufacturing of some of these supplies. Now that it is completed, certainly we hope that the government will adequately support the maintenance and further development as this most worthwhile project takes its rightful place in the economic development of the entire country. I am sure that you are going to find it increasing in usage in the years ahead.

Statement of International Trade Council

The International Trade Council of the Birmingham Area Chamber of Commerce acknowledges and stresses the importance of the Warrior-Tombigbee Waterway system to the Birmingham area economy. In the most recent reporting year, about 18 million tons were shipped on this waterway to or from the Birmingham area. These goods consisted of raw materials and petroleum and chemical products inbound and coal, grain, cast iron pipe, steel products and semi-finished manufactured goods going south to Mobile from the Birmingham area. Many of these outgoing products were involved in export trade, therefore creating a positive impact on our country's trade deficit.

The Warrior-Tombigbee Waterway's importance to the Birmingham area will increase upon the completion of the Tennessee-Tombigbee Waterway in 1985. Also, U.S. Steel's $700 million pipe mill is open and working toward full production. Water borne shipments of ore and finished products are expected to triple as this production increases. In addition, a $100 million continuous slab caster is under construction at the Fairfield works. Birmingham is again becoming one of U.S. Steel's major centers in the United States, and the availability of water borne transportation for both inbound and outbound products is of major importance in the overall plan of this manufacturing complex in our area. The Warrior-Tombigbee system provides this means of transportation. An adequate Operations and Maintenance Program is more important than ever.

This Council also considers the completion of the Oliver Lock project in Tuscaloosa to be of much importance to the Birmingham area, since all of our products must now go through this antiquated lock. Therefore, we strongly encourage approval of the funds in the proposed U.S. Corps of Engineers' budget to complete the Oliver Lock replacement planning and design activities.

Finally, the importance of both the overall waterway and the upgrading of the Oliver Lock are emphasized by the Birmingham area's port development effort. A recent study indicated that there are several sites on the Locust Fork that can be developed by the City of Birmingham for a major inland public port. Earlier studies have indicated that such a port would create more than 3000 primary jobs and about 6000 secondary jobs.

STATEMENT OF EARL B. PARSONS, JR., VICE PRESIDENT—ELECTRIC OPERATIONS, GULF POWER CO.

Gulf Power Company is an investor-owned electric utility and a member of The Southern Company; we serve 247,309 customers in the Florida panhandle. Our Company utilizes coal for over 99 percent of its total generation requirements within Florida and consumes approximately 2.9 million tons per year. Over 95 percent of our coal deliveries in Florida are dependent upon waterway transportation.

Gulf Power currently moves approximately 1.0 million tons of coal on the Warrior-Tombigeee Waterway and/or through the Port of Mobile. The remainder of Gulf's coal delivered over the national river systems originates from the Southern Illinois Coal Basin vicinity and travels down the Mississippi River through the Port of New Orleans. From the ports of New Orleans and Mobile, all waterway deliveries travel via the intercoastal waterway for delivery at our Pensacola and Panama City generating plants.

As you can see from Gulf's dependence on the Warrior-Tombigbee Waterway and the Port of Mobile, we wholeheartedly support the need for adequate funding to properly maintain and improve operations. It is imperative that Gulf continue to receive coal shipments in order to provide continued reliable electric service at the most economical cost to our customers. We are also concerned about the future industrial growth in our service area and must be certain that adequate fuel supplies can be transported to our generating plants.

In summary, we are in full support of the efforts of the Warrior-Tombigbee Development Association to provide efficient and reliable waterway systems for coal delivery. We urge you to approve the Corps' O&M Budget request to provide adequate funds to maintain the Warrior-Tombigbee Waterway and the Mobile Harbor. Also, the funding to continue planning for the replacement of Oliver Lock is a very important part of the Corps' budget request.

We feel that it is not only in Gulf Power's interest to support this worthy endeavor, but also in the best interest of the customers of our service area and the nation to improve our capabilities to transport coal and other commodities from points of origin to market places via the Warrior-Tombigbee Waterway and the Port of Mobile.

STATEMENT OF M.B. RAMBEAU, MOBILE AREA CHAMBER OF COMMERCE

This Statement is presented on behalf of the 3,300 business members of the Mobile Area Chamber of Commerce in support of the continued development of the Warrior-Tombigbee Waterway system.

The Port of Mobile, one of the top twelve ports in the nation based on tonnage handled (export/import) is dependent upon the extensive waterway systems. These waterways, including the Warrior-Tombigbee system, play a vital role in the movement of both domestic and international commerce. Over they years, as the records will confirm, the Warrior-Tombigbee system has grown annually in the amount of tonnage handled, primarily bulk materials, including but not limited to coal, ores, petroleum products and other materials. The export of some of these commodities has assisted greatly in our balance of payment which continues to be a growing problem for our nation.

Based upon the vital role of this major waterway system, we respectfully submit that the Operation and Maintenance Budget for FY 1986 (8.4 million dollars) is insufficient for the proper development of the waterway and request that consideration be given by your Committee to increasing the funding to meet the Corps of Engineers capability of 19.8 million dollars.

We further respectfully request that this Statement be incorporated and made a part of the record.

STATEMENT OF RAYMOND D. LUCAS, VICE PRESIDENT, TOM SOYA GRAIN CO., INC.

We began shipping soybeans and wheat on the Tenn-Tom in the spring of 1979. We were the first to take advantage of the opportunity to ship by water out of East Mississippi.

In the last (6) six years we have moved approximately four hundred (400) barge loads of grain out of our elevators at Aliceville, Al. and West Point, MS. In addition, we have moved fertilizer, gypsum rock, and salt north to Columbus, MS. We are now moving (60) sixty barge loads of salt a year north to Columbus, MS. The completion of the waterway has brought numerous inquiries in regard to the movement of other commodities. We will soon be bringing slagg rock south to serve the county in which we operate. The future for transportation on the Tenn-Tom is unlimited.

We strongly support Mr. Offa S. Nichols, Jr., President of Warrior-Tombigbee Development Association in his efforts to improve the efficiency and reliability of the Warrior-Tombigbee Waterway. We also support the Corps' budget request for O&M funds so that efficiency will not be impaired and planning for the future can be continued.

STATEMENT OF BILL L. HARBERT, PRESIDENT, HARBERT INTERNATIONAL, INC.

The Warrior-Tombigbee Waterway is an important link in the State of Alabama. It provides for the transportation of products of the mines, the iron and steel industry, agriculture, and forest, most of which is destined to the Port of Mobile for export; thus, ultimately enhancing the U. S. balance of payments. The Waterway is a vital source of employment for thousands of people engaged in the above industries.

I strongly support the funding for the required improvements, including the replacement of the 47 year old, outmoded Oliver Lock, as well as the funds required for operation and maintenance of the waterway.

A more efficient waterway ensures the continued growth of industry and is conducive to further economic development in an area with one of the highest unemployment rates in the nation.

The proposed O&M funding for the Warrior-Tombigbee is $4 Million below the past five year average and the funding for the Port of Mobile is $3 Million less than the past five year average. These are serious deficiencies that pose a threat to the industries that rely on efficient and economic water transportation.

I support the testimony to be given by the President of the Warrior-Tombigbee Development Association and hope that the importance of his comments will be well taken by the Appropriations Committee.

STATEMENT OF WILLIAM CARR, PRESIDENT, JIM WALTER RESOURCES, INC.

We would like to take this occasion to offer our strong support of the testimony to be given by Mr. Offa S. Nichols, President of the Warrior-Tombigbee Development Association. The Warrior-Tombigbee Waterway and the Port of Mobile are of vital importance to the Alabama coal industry and in particular Jim Walter Resources, Inc. Coal production from our No. 4 and No. 5 Mines which will soon total four million tons annually is dedicated entirely to the export market. Thus, the continued improvement of the Warrior-Tombigbee Waterway and particularly the Oliver Lock and Dam is of great importance to the coal industry and the economic well-being of the State of Alabama.

The proposed O&M funding for the Warrior-Tombigbee Waterway is $8.4 million, which is more than $4 million below the average of that required over the past five years. For the Port of Mobile, the proposed funding is $1.9 million, which is more than $3 million below the five year average. These are very serious deficiencies and threaten the future of efficient and reliable commerce. In this area, with unemployment still among the highest in the nation and with basic industry still struggling to become competitive and get back on its feet, this would be devastating.

World coal markets are becoming increasingly competitive and for our industry to survive, an economic and reliable form of coal transportation is essential. For these reasons we support the Corps of Engineers' budget request, although we believe that additional funds are needed to provide an adequate O&M program and to continue channel improvements.

We thank you for this opportunity to add our support to the objectives of the Warrior-Tombigbee Development Association. With kindest regards, I am,

Statement of J.C. Law, Representative, Hunt Oil Co.

As a concerned user of the Warrior-Tombigbee Waterway, I would like to state my reasons for supporting this waterway.

Hunt Oil Company is a refinery that produces such products as all grades of gasoline, several types of asphalts, fuel oils and coke. We receive approximately 21,000 tons of crude oil per month and approximately 20,000 of vacuum bottoms by barge. We, in turn, barge out approximately 20,000 tons of crackerfeed a month. The above tonnage represents millions of dollars in revenue. Our dock facilities, which were first built in 1946, are located on the Black Warrior River, near the Oliver Lock and Dam. We have an expansion in the scope for the Hunt Oil Company, thus producing more products that will need to be barged out or more bargedin.

One crucial reason for us needing the waterway is that we make a product called "crackerfeed" named so because it is used in catalytic crackers. The only way we have of delivering this product is by the waterways. Fortunately, the refineries that we ship to are all over the intercoastal waterway.

With the opening of the Tennessee-Tombigbee Waterway, we anticipate the market in the North to open. We already have prospects to move an additional 100,000 tons/year to the Northern U.S. This gives us an optimistic view of other job possibilities.

We also receive crude oil from international freighters; first off-loaded in Mobile into storage tanks, and then barged to our refinery.

Let me also state that with us having so much barge traffic, it is very important that monies are needed for dredging operations to continue so we can maintain proper draft limits for traffic to move in an economical manner.

So you can gather how important our waterways are, due to lower costs and energy efficiency, in the operation of our refinery. We express deep concern over any delay or non-approval of these much needed funds. I am,

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Statement of R.W. Raybuck, General Manager, United States Steel Corp.

I would like to take this opportunity to express support for the testimony to be presented to your committee by the Warrior Tombigbee Development Association. United States Steel Corporation in Alabama relies very heavily upon the Warrior Tombigbee River System to provide economic means of transportation for our raw materials and finished products. We feel that it is essential that this river system be properly maintained and operated in a manner to promote continuing growth in this area.

Plans for United States Steel involvement in this area are encouraging and we anticipate our use of the river system over the next several years to approximate 4.6 million net tons per year.

We hope that you will provide the necessary support for maintenance and continuing development of this vital river system.

Letter From Steven M. Bradshaw, Manager, Marketing and Sales, Dixie Carriers, Inc.

March 12, 1985

Honorable Mark Hatfield, Chairman
Subcommittee on Appropriations
for Energy & Water Development
United States Senate
Washington, D. C. 20510

Dear Senator Hatfield:

This letter is sent to you on behalf of Dixie Carriers, Inc. Dixie Carriers Inc. is a major diversified water carrier which provides service to the public through the transportation of all types of bulk cargos. Our area of operations is the Inland Waterways of the United States.

Dixie Carriers, Inc. has operated on the Warrior-Tombigbee System for many years. We also utilize the Port of Mobile on a frequent, regular basis for both inland and offshore operations.

The recent opening of the remainder of the Warrior-Tombigbee Waterway has created additional opportunities for water transportation. Chemicals and coal, moving to and from the Tennessee River by water and other modes, will now have an alternative, and in many cases, more economical route.

The importance of adequate funding for the Waterway and the Port of Mobile is paramount. We support the current Corps of Engineers budget request for O&M and planning funds. However, additional funds should be made available to provide levels which will allow adequate O&M programs and the continuance of channel improvements.

Sincerely,

Steven M. Bradshaw
Manager Marketing and Sales

Statement of Alan R. Barton, President, Mississippi Power Co.

Colonel Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association, is appearing before your Subcommittee in support of the Waterway and the Corps of Engineers' budget request relating to the project. As President of Mississippi Power Company, a user of the Waterway, I am writing in support of Colonel Nichols's testimony. I am also requesting consideration be given to increasing the proposed funding level for the BWT to provide for an adequate operations and maintenance program and continued planning for the new Oliver Lock.

The cost of fuel is the single largest operating expense Mississippi Power Company faces. The importance of coal to the company and its customers is related in a recent issue of Powerlines, our company magazine which is enclosed. Coal mined in the region served by the Warrior-Tombigbee Waterway provides us with a reliable, competitive source of fuel. (Please see the article on page seven, "Transportation by Water" which refers to the Warrior-Tombigbee route.) Any deterioration of the reliability of shipping

along the Waterway would force the Company to higher cost suppliers. The Warrior-Tombigbee Waterway has played an important role since 1976 in the delivery of coal to Mississipipi Power Company's facilities. In 1984, approximately 32 percent, or 973,000 tons, of our coal purchases were shipped over this Waterway. This represents an increase of 55 percent in the tonnage shipped over the Waterway in 1983 and we expect the quantity to continue to increase.

Mississippi Power Company operates in southeast Mississippi and provides electric service to over 160,000 customers. Our customers include several military installations, federal government agencies, and prime defense contractors.

Any deterioration in the ability to ship over this waterway, or an increase in our costs due to increased delays, would not only adversely affect all of these customers including federal installations, but would also impede future economic development in southeast Mississippi.

Your favorable consideration of the testimony on behalf of the Warrior-Tombigbee Development Association will be greatly appreciated.

STATEMENT OF CARL A. TORBERT, JR., PRESIDENT, DRAVO NATURAL RESOURCES CO.

The Warrior-Tombigbee Waterway along with the other waterways of the State of Alabama are invaluable links to a successful Port of Mobile and the economic growth in South Alabama. Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association, will present testimony stressing the need for maintaining and enhancing the efficiency and reliability of the Warrior-Tombigbee System as well as the importance of low-cost, energy efficient water transportation to local, national and international trade. We fully support and endorse his testimony.

Radcliff Materials, Inc. is one of the leading producers of construction raw materials and aggregates on the Gulf Coast. We rely extensively on the waterways of Alabama, Florida, Louisiana, Mississippi and Texas for production and delivery of our products. In 1984 we transported via Alabama waterways in excess of 1,250,000 tons of sand and gravel. We also transported over 700,000 tons of limestone and clay as well as significant quantities of other products. Our projections for 1985 are:

Sand and Gravel	1,500,000 tons
Other	750,000 tons

Radcliff Materials, Inc. operates a fleet of 23 boats, 85 barges and 7 dredges. We maintain a large terminal and handling facility on McDuffie Island in Mobile, Alabama in addition to numerous support facilities throughout South Alabama and the Gulf Coast.

The maintenance of authorized project dimensions is essential for the efficient, orderly production and delivery of materials throughout the waterway system. In order to provide this capability, it is imperative that the Army Corps of Engineers be provided with the appropriations necessary to continue the maintenance and development of the Warrior-Tombigbee Waterway System as requested in the fiscal year 1986 budget.

It is also requested that additional funds be provided to insure that the Corps has the capability and flexibility necessary to maximize the utilization of the Waterway System and Mobile Harbor. Additionally, the provision for planning funds to replace the outmoded Oliver Lock should not be overlooked.

STATEMENT OF JAMES C. LUDWIG, VICE PRESIDENT, SOUTHERN COMPANY SERVICES, INC.

Southern Company Services, Inc., on behalf of Alabama Power Company, Gulf Power Company and Mississippi Power Company supports the Warrior-Tombigbee Development Association and its' President in their efforts before your committee. The Southern electric system continuously uses the Warrior-Tombigbee Waterway to deliver coal to system plants and therefore, the condition of the waterway affects the economy of our service area.

Alabama Power Company, Gulf Power Company and Mississippi Power Company join with the Warrior-Tombigbee Development Association in an effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway because of the economies of water transportation and the importance of the Warrior-Tombigbee Waterway to local, national and international trade.

For the past twenty-two years these three utilities have used the Warrior-Tombigbee to transport coal to their respective electrical generating plants at Demopolis, Alabama; Mobile, Alabama; Pensacola, Florida; Panama City, Florida; and Biloxi, Mississippi. In 1984 more than 6.1 million tons of coal was transported from points along the Warrior-Tombigbee Waterway for these three electrical utilities. In 1985 system plants will be receiving tonnage off the Tennessee-Tombigbee Waterway that would have previously gone down the Mississippi River through New Orleans, but with the opening of the Tennessee-Tombigbee Waterway this year the barges will be moving onto the Warrior-Tombigbee River system and through Mobile. Gulf Power Company has also used the Port of Mobile to receive an average of 750,000 tons of coal per years since 1977.

Because of the economic advantage of water transportation over other modes of transportation; the 1,248,868 customers of these three electrical utilities will be directly affected by any expenditures for maintenance and upgrading of the Warrior-Tombigbee Waterway, which will improve the waterway's efficiency and reliability. Higher costs through inefficiency or unreliability of the Warrior-Tombigbee Waterway will have a direct and adverse effect upon our customers.

It is for these reasons that a program of constant maintenance and upgrading of the Warrior-Tombigbee Waterway channels and locks is not only necessary but imperative. We support the Corp's budget request for O&M for the Warrior-Tombigbee and Mobile Harbor, but in addition, would like to see more funds made available to ensure both an adequate O&M program and continued channel improvement work.

STATEMENT OF CARL A. REGISTER, PRESIDENT, VULCAN MATERIALS CO.

We support the testimony of the Warrior-Tombigbee Development Association. We are part of the collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile. Our plans for the future include the possible use of the Waterway to ship crushed stone to the Gulf Coast to be used by the construction industry in concrete, asphalt, and road bases. The crushed stone will replace the rapidly depleting gravel, clam, and reef shells with a superior construction material. The upgrading of the Waterway will not only benefit an area with unemployment still among the highest in the nation, but will better utilize the lower cost, energy efficient barge transportation.

We support the Corps' budget request for Operations and Maintenance for the Warrior-Tombigbee and Mobile Harbor, but we feel that additional funds should be made available to ensure both an adequate O & M Program as well as a channel rehabilitation program. Funds should also be made available to continue the orderly and efficient preparation for the replacement of the Oliver Lock which will be an investment in the future of our nation, region, as well as Alabama.

STATEMENT OF CARLTON BAKER, VICE PRESIDENT, SOUTH CENTRAL BELL

I want to personally give my support to the current budget request by the U.S. Army Corps of Engineers for funds to operate and maintain the Warrior-Tombigbee project and the Port of Mobile. These funds are critically important to a healthy waterways system that benefits all the people of Alabama.

This project is also vitally important to South Central Bell. The Warrior-Tombigbee and Port of Mobile projects are a definite boost to the state's economy. Therefore, the projects also affect the economic well-being of businesses in Alabama. In South Central Bell's case, much of the company's financial health depends on steadily growing demand for its telecommunications services.

On a related matter, I urge you to support the proposed funding to help plan the Oliver Lock.

Alabama is coming slowly out of the economic stagnation that hit all of the country several years ago. Unemployment remains at a high level, and we have a number of basic industries still trying to become more competitive with foreign producers.

The Warrior-Tombigbee and its associated projects have my full support. They need your support, also.

STATEMENT OF WM. "BILL" RUSHTON, DIRECTOR, ALABAMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS

I wish to express my thanks to you for the opportunity to address this Subcommittee today along with my fellow Alabamians in support of the Black Warrior-Tombigbee Waterway. I want to restate my strong and continued support for a fully-funded operation and maintenance program by the Corps of Engineers for the Black Warrior-Tombigbee Waterway and for Mobile Harbor. Also, I support approval of additional funds to those requested by the Corps of Engineers to continue the planning and engineering of the new Oliver Lock.

The Black Warrior-Tombigbee Waterway is the most efficient of Alabama's inland waterways. It is linked to world markets via the Port of Mobile, and now to all of mid-America and the Great Lakes via the Tennessee-Tombigbee Waterway. During 1984 we understand that tonnage on the Black Warrior-Tombigbee Waterway totalled 18 million tons. This shows continued and substantial growth when compared to 1966 figures of 8 million tons. The Black Warrior-Tombigbee Waterway provides efficient transportation for approximately 75% of Alabama's coal which is exported through the Alabama State Docks at Mobile and for the grains shipped by farmers to Mobile from 21 Alabama and Mississippi counties.

Other important commodities such as ore, steel, forest products, petroleum, chemicals and aggregates move on the Black Warrior-Tombigbee Waterway to the Gulf of Mexico via the Gulf Intracoastal Waterway enroute to other parts of the nation and the ports of the world.

We support a request of at least $12.4 million for the regular operations and maintenance (O&M) program of this waterway. The Corps of Engineers' request for $8.4 million is an inadequate amount for an effective operations and maintenance program on the Black Warrior-Tombigbee Waterway. This proposed amount for O&M is more than $4 million below the average amount which has been required over the past five years. This deficiency would seriously threaten the future of efficient and reliable water commerce on the Black Warrior-Tombigbee Waterway. With our unemployment still among the highest in the nation and with basic industry still struggling to become competitive and get back on its feet, this would be devastating to our area. With this amount, several Corps' projects underway that are designed to improve channel efficiency and reduce future costs, could not be continued.

Also, $600,000 in additional funds need to be provided to the Corps of Engineers for continuation of the planning and engineering of the new Oliver Lock. The existing lock, built before World War II, is substandard in design and dimension compared to the other five locks on this waterway, which were

completed and opened to navigation between 1954 and 1975 and meet current design standards. The Oliver Lock is already a serious bottleneck on the Waterway. If construction on a new lock were begun today, it would not be open before the existing lock reached the practical upper limit of tonnage capacity. Congressionally authorized studies for modernizing the Black Warrior-Tombigbee have been completed and the Chief of Engineers has recommended replacement of the Oliver Lock with a modern, standard-sized lock. We believe a replacement lock is vital to the continued increased utilization of the Waterway.

Also I support the Association's request for adequate funding for operation and maintenance of Mobile Harbor. Mobile Harbor is vital to the ongoing operations of the Port of Mobile and the Black Warrior-Tombigbee Waterway. The Alabama State Docks at the Port of Mobile is completing a $250 million expansion program and this facility offers the most advanced coal handling technology available in this country. This State investment far exceeds the Federal investment for constructing all the locks and dams on the entire Waterway.

In closing, I affirm my support and that of the Alabama Department of Economic and Community Affairs. I can assure you that the State of Alabama will continue to meet its responsibilities and obligations for these projects. I appreciate the support and assistance which you and all the members of the Subcommittee have given us over the years and for insuring adequate funding is provided for the full-time operation and maintenance of the Black Warrior-Tombigbee Waterway.

MOBILE HARBOR, ALA.

STATEMENT OF ROBERT M. HOPE, DIRECTOR, ALABAMA STATE DOCKS DEPARTMENT

On behalf of the Alabama State Docks Department and the Port of Mobile we appreciate the opportunity to appear before this Committee today and offer this statement in regard to Fiscal 1986 appropriation measures relative the Mobile Harbor.

The Alabama State Docks Department is the terminal facilities operator for the Port of Mobile and operates and maintains port handling facilities which include a Bulk Material Handling Plant, Public Grain Elevator, Export Coal Handling Terminal, general cargo facilities including wharves, piers and warehouses as well as a Terminal Railway. The Port complex entails approximately 1445 acres and is valued in excess of $500 million.

The primary cargoes handled through the Port of Mobile include inbound ores such as bauxite, manganese, magnesite, ilmenite, iron ore and steam coal. Grain exports include soybeans, corn, wheat, oats, middlings, and screenings. Coal for export constitutes a major cargo as well as outbound crude oil which moves to the Port for recovery operations in Florida and in North Mobile County.

During the past eight years the Alabama State Docks Department and the State of Alabama have expended in excess of $250 million on renovations, expansions and improvements to the Port handling capabilities at the Mobile facilities.

These funds have been expended to meet the required present cargo handling capability of tonnage generated by our in-place inland river system, the four trunk line railroads serving Mobile, and forty-five truck lines which initiate and terminate cargo in Mobile.

A complete Port renovation program which impacted each of the four terminal operating facilities at Moble has been completed and the Port's handling capability in all areas has been increased in anticipation of additional traffic which will be generated by the newly completed Tennesseee-Tombigbee Waterway.

Several of the programs which we discussed before this Committee last year dealing with improvements in the Mobile Harbor have been completed while others are under contract at this time.

Due to the splendid cooperation and work of the Mobile Division of the Corps of Engineers in 1984-85, our overall program is to the point where we would respectfully request this Committee for a Budgeted Allocation for Fiscal Year 1986 of two million dollars for Operation and Maintenance of the Mobile Harbor.

We appreciate the opportunity to appear before this Committee and voice our support in concert with that of Governor George C. Wallace for the requested Budgeted Allocation.

We would respectfully request that this statement be incorporated in and made a part of these Hearings.

STATEMENT OF JOHN L. MCCARRON, JR., MOBILE AREA CHAMBER OF COMMERCE

ON BEHALF OF THE MOBILE AREA CHAMBER OF COMMERCE WE APPRECIATE THE OPPORTUNITY TO APPEAR BEFORE THIS SUBCOMMITTEE TODAY AND OFFER THIS STATEMENT IN REGARD TO FY 1986 APPROPRIATION MEASURES FOR MOBILE AREA PROJECTS.

MR. CHAIRMAN, OUR STATEMENT HERE WILL BE IN SUPPORT OF THE STATEMENT MADE BY THE ALABAMA STATE DOCKS REPRESENTATIVE AS IT PERTAINS TO MOBILE HARBOR.

WE ARE PLEASED TO NOTE THE FY 1986 BUDGET INCLUDES $1.9 MILLION FOR OPERATION AND MAINTENANCE DREDGING OF THE MOBILE HARBOR WHICH IS THE CORPS CAPABILITY FOR THIS WORK. HOWEVER, THERE ARE SEVERAL OTHER LOCAL WATERWAY PROJECTS THAT ARE VITAL TO THE MOBILE AREA FROM THE STANDPOINT OF THE COMMERCIAL FISHING AND RECREATIONAL INTEREST WHICH ARE UNDER-BUDGETED. THE CORPS APPROVED CAPABILITIES WE RESPECTFULLY SHOULD BE NOTED AND WE ARE LISTING THESE BELOW AS FOLLOWS:

PROJECT	AMOUNT BUDGETED	TOTAL CORPS CAPABILITY
BAYOU LA BATRE CHANNEL	$11,000	$734,000 (DREDGING)
DAUPHIN ISLAND CHANNEL	$35,000	$533,000 (DREDGING)

MR. CHAIRMAN, WE FURTHER REQUEST THAT THE FY 1986 BUDGET BE INCREASED ON THESE PARTICULAR CHANNEL PROJECTS, SO THAT THEY MAY BE PROPERLY MAINTAINED PRIMARILY FOR THE IMPORTANT COMMERCIAL FISHING INDUSTRY AS WELL AS THE SPORTS FISHING INDUSTRY OF OUR LOCAL AREA.

ON BEHALF OF THE MOBILE AREA CHAMBER OF COMMERCE AND THE PORT OF MOBILE, I AM REQUESTING THAT THIS SUBCOMMITTEE CAREFULLY REVIEW THE BUDGETED ALLOCATIONS, EXAMINE THIS TESTIMONY, CONFER WITH THE MOBILE DISTRICT OF THE CORPS OF ENGINEERS FOR SUBSTANTUATION AND APPROPRIATE ADEQUATE FUNDS TO ALLOW THE CORPS TO INSTITUE AND COMPLETE A PROPER MAINTENANCE DREDGING PROGRAM ON PROJECTS THOUGHOUT THE AREA DURING FY 1986.

AGAIN, I APPRECIATE THE OPPORTUNITY TO APPEAR BEFORE THIS SUBCOMITTEE TODAY AND I THANK YOU FOR YOUR INTEREST AND CONSIDERATION. WE WOULD RESPECTFULLY REQUEST THAT THIS STATEMENT BE INCORPORATED IN AND MADE PART OF THESE HEARINGS.

COOSA-ALABAMA NAVIGATION PROJECT

STATEMENT OF LISTER HILL PROCTOR, PRESIDENT, COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION, INC.

I am pleased to have this opportunity to tell you what we feel is needed in the Fiscal Year 1986 Energy and Water Development Appropriations for the projects listed below. As the President of our Association I speak for a large and diverse group of citizens who see continued development of the Coosa-Alabama Waterway as an opportunity for growth in our region and all of the nation.

Our membership is reflected in the composition of the delegation we brought with us today. Some use the waterway now, either as shippers or tow operators. Others are businessman, bankers and a variety of other private individuals who have a stake in future economic development for their firms and their successors to enjoy. Then there is the larger group of elected officials and their constituents typical of the twenty-three municipalities and eighteen counties along the water who are members of this Association. These people were elected as you were - to lead; to govern now and also plan a better future for the citizens they represent.

Mr. Chairman, we thank you for the support your committee has given us in the past. As you will be aware from this statement, we appreciate the complex funding decisions that face the Congress this year. We are convinced that the appropriations we support are not only essential, but will bring a substantial return.

Tabulated below are our specific funding requests for Fiscal Year 1986. The projects we support are part of a waterway system that originates in Northwest Georgia and flows diagonally across the State of Alabama to Mobile Harbor. For comparison purposes we included the amounts in the Administration's Budget Request.

Surveys	Budget Request	Our Request
Dalton Lake, GA	$ 500,000	$ 500,000
Operations and Maintenance (O&M)		
. Alabama-Coosa Rivers, AL* (Alabama River including Claiborne Lock and Dam, AL)	5,204,000	5,653,000
. Millers Ferry Lock and Dam, AL	3,257,000	3,257,000
. Robert F. Henry Lock and Dam, AL	2,511,000	2,511,000
. Mobile Harbor	1,927,000	1,927,000
. Allatoona Lake, GA	4,132,000	4,132,000
. Carters Lake, GA	2,442,000	2,442,000

As I said, we are keenly aware of the fiscal problems facing the Congress with the large Federal budget deficit, and the increasing costs of defense, social problems and health care. Like all citizens we are looking for positive measures to stimulate the economy and reduce the burden of these programs on the productive tax payers. We know these problems can be solved, but as a nation we won't work our way out by turning our backs. We oppose a spending freeze because it avoids the problem. We must look for solutions which will strengthen our national economy rather than let it flounder.

Part of the background of the current fiscal problem is the continued depression in the barge industry, which reflects continued trouble in many other parts of the economy. We are extremely grateful for the general recovery that has occured, which includes the drop in inflation and interest rates. However, the barge industry is in a period when only the strongest companies are surviving. For this reason, we vigorously oppose the Administration's proposals for cost sharing and additional taxes on water borne commerce. Recently Harry Cook, President of the National Waterways Conference of which we are a member, said "this is no time for the Federal government to take a hands-off approach ... what is sorely needed right now is an enlightened hands-on Federal policy in a partnership effort to maintain and modernize the transportation infrastructure ... Too many regions, too many industries, and too many livelihoods are dependent on efficient waterway transportation for it to be left entirely to the whims and fortunes of the world marketplace".

If we lose a viable water transportation mode we face problems. We agree with Dr. Alfred E. Kahn's testimony against the aquisition of American Commercial (barge) Lines, Inc. by the CSX Corporation (rail). Dr. Kahn noted that, since there has been "... a marked increase in concentration of rail carriage" in the past several years, the "preservation of that intermodal competitive check" provided by water carriers "becomes even more important".

Last year, Mr. Chairman, was my first appearance before this committee, and I had only a brief exposure to the basic views of our group. As you know, this Association has been working on developing this waterway system for ninety-five years. Yes, we were organized in 1890 by the same William Patrick Lay who founded the Alabama Power Company, our fine electric utility. Alabama Power today is still an active member. The more I have studied the position of the Association the more convinced I am that our position has been consistent and has been correct. At the same time, we are grateful that the membership of your committee and its staff has been relatively stable and that so many of you appreciate the unique contribution of water transportation. Not that any of you go back to 1890, but as individuals neither do we. With your background you know why we oppose additional fuel taxes and the new ton-mile fees (taxes) that would be imposed upon waterways that were kept free from any tolls for more than 200 years.

No one will say they oppose development of the system. Even President Reagan on the eve of the election in November, 1980 assured the American Waterway Operators (AWO) that "...we are dedicated to building an inland transportation system which will be second to none ... a system which will be a key to the economic revitalization of the country ..." The catch is that the Reagan Administration is proposing that some one else but the Federal government will pay for it. Each year, for five years now, the Administration has proposed that local interests and the direct users pay a higher and higher percentage of the cost, not only of construction but this year for Operations and Maintenance as well. We do not need to tell you that the industry is in a state of shock over these proposals as they already face an automatic October increase in the fuel tax to 10¢ per gallon. The effect, of course, is to halt work on a waterway system that is badly in need of repair and improvement. We cannot help but believe that most American taxpayers expect that their tax dollars will keep waterways open as well as build roads.

Because the situation is so serious in the barge industry, the AWO took the position for 1985 that you know so well. They do not seek any new projects and they will oppose vigorously any and all additional waterway user tax proposals. And you can be sure they made certain that their position would come to the attention of development groups like ours. You are also aware, I am certain, of the position of the American Farm Bureau Federation on user fees. This happens to be one place where our Alabama Farm Bureau agrees with the national group. The Farm Bureau says, "we accept the imposition of a reasonable user fee on water transportation ... providing that its basis and maximum level are clearly established in advance and that the proceeds are utilized for those waterways". They also add, however, the caveat which we also have insisted upon, namely that the fee (tax) should provide no more than the portion of those costs of the waterways which can be allocated to commercial transportation. They point out that waterways provide many additional benefits. The Farm Bureau also insists - as we do - that any inland waterway user fee should be set by the Congress, and not by the Administration.

In view of the many uncertainties, including the plight of the towing industry, we will not push for construction funds for the Coosa River Navigation Project this year. As you know, this Project has been authorized since 1945 and the first portion to Montgomery was finished in 1972. This past year we have worked with an Interim Committee of the Alabama Legislature and you will hear of the significant accomplishments of that committee from the Chairman, Senator Bill Drinkard. There were some things that had to be done at the state level and we are pleased with what has been accomplished.

Now to the specifics where we do make appropriation requests. Our only difference with the Administration request comes in the "Alabama-Coosa Rivers" project. Actually this project does not involve, or come anywhere near, the Coosa River. It is better called "Alabama River including Claiborne Lock and Dam". Claiborne is the first of three structures coming upstream on the waterway from Mobile. The other two are Millers Ferry and Robert F. Henry. Between Claiborne Lock and Dam and the mouth of the Alabama River is a 72 mile stretch of the river which, like many other rivers, was not easy to predict when the project was designed. We just have not had the reliable channel that was anticipated by those who made investments in facilities on the river, including the State of Alabama. From experience with operating the waterway since it opened in 1972 it is evident that certain reha-

bilitation work must be done to bring the waterway up to standard. We have worked closely with the Mobile District of the Corps as they worked up a two year program to modify the training dike system and change the dredging profile. For Fiscal Year 1985 $9.653 million was appropriated for this project to get the work underway. We strongly supported what amounted to a large increment of funds above what would normally be required for Operations and Maintenance to get as much of the work done in the first of the two years as possible.

The Mobile District of the Corps informs us that it has not been possible to process some of the environmental clearances and get some of the other preliminary work out of the way. Thus, instead of more than half of the work being done this summer (the rest of FY85), considerably less than half will be done. The job can not be completed in Fiscal Year 1986 at the proposed level of funding. For that reason, we are requesting that the same amount, $9,653,000 be appropriated for the Alabama-Coosa Project in 1986.

Mr. Chairman, you and your committee are as concerned as we are about what the future holds for authorization and funding of waterways. Even with the onerous fuel tax which has been collected since 1980, there has been an unprecedented period with no new project starts. A natural consequence was the deterioration of the existing system that we all deplore. Looming larger each year is the Federal budget deficit, the growing imbalance in international trade, and the related threat of higher interest rates. It would be hard to contrive a scenario more inhibiting to the tenuous and ill-timed objective of the Administration; namely, for the private sector or local governments to completely replace the Federal Public Works program.

Just because we must set aside for another year our request for the first construction funds for the Coosa River Navigation Project does not mean that the Project has lost its luster. Not by any means. We have provided Senator Drinkard's Joint Interim Legislative Committee with all the available information the substantial benefits of the Coosa Project to Alabama, to Georgia, to the Southeast and to the Nation. We have briefed them on what we learned about the fragile and inadequate assumptions which provide a very shaky underpinning for the traditional calculations leading to the widely used Benefit to Cost ratios. The calculations are particularly vulnerable when the B/C ratio is applied to underdeveloped regions like the Coosa Valley. We have briefed our legislators on the fact that back in 1977 the Congress, through the work of this Congressional committee and its leadership, provided in the Section 140 legislation that the so-called "regional" or personal income benefits could be counted along with the narrowly defined "national benefits" in planning a waterway project. We also briefed them on the updated regional benefit analysis procedures developed by the Corps of Engineers. These new econometric procedures not only gave us three independent but mutually reinforcing estimates of the benefits of the Coosa Project. The results showed that the Coosa Project will have benefits in new jobs and new economic activity well beyond what is normally considered the region. Follow-up studies of the highly successful McClellan-Kerr Project in Arkansas produced tangible evidence of the same kind of normally unanticipated results.

And why not? Each year more information is available and shared, communication is faster and cheaper, and personal mobility is easier. More quickly than many of us realize our traditional "regions" are being merged and their borders obscured. We all recognize and accept this "megatrend" at the international level, but we may be "too close to the forest" to see what is taking place here at home. Long standing formulas like the Benefit to Cost ratio need modification to stay up with those recent changes in our economic and social fabric that made "Megatrends" a best seller.

In the not too distant future, and possibly even for Fiscal Year 1986, this Committee may see fit to fund the resumption of the design and engineering work on the Coosa River Navigation Project which was suspended two years ago. There is much more for the Corps of Engineers to do, particularly in designing the locks and the navigation approaches to those locks. We are confident that the arrangements at our non-Federal level will be worked out this year. When we, collectively, sense that our nation is ready to start building again, we will be back to speak up for this project, one which we are convinced is a viable opportunity to improve the economic future and the quality of life of our citizens.

We would be remiss not to congratulate the Committee on their indispensable contribution to completion of the Tennessee-Tombigbee Waterway. We hope there will be room for all of us at the dedication ceremonies on June 1. Our Alabama River is a spur of the new waterway and we already have people like Alabama River Pulp planning to use the waterway to serve customers in the Midwest. This is one of the reasons we are pushing hard for completion of the rehabilitation work on the Alabama River in FY86.

One final observation before we close. In the "rationale" used by the Administration to support additional user fees, the claim is made that the navigational services provided by the Corps of Engineers are basically "commercial". Those who characterize the Tenn-Tom and the McClellan-Kerr as "boon-doggles" obtained by "tin cup artists" will seize upon this narrow view of the contributions of navigation projects. Fortunately it is a fact in our nation that the benefits of these magnificent public works projects largely come through stimulation of the commercial market place. New economic ventures, expansions of existing industry, new jobs become the vehicle for social progress. In the process, increased tax revenues at all levels of government provide cash returns over and above the multiplying effects in the economic system. We see no alternative to this method of developing certain areas of the nation.

If the Administration's proposals are adopted, only the already rich regions of the country will be able to afford to build the facilities that can produce the activity described. Such a policy would further separate the rich and poor, the developed and the undeveloped.

We appreciate the opportunity to appear before this distinguished committee and to be a part of your important deliberations. We wish you well in your valuable service to our nation.

COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION'S DELEGATION
WHICH APPEARED BEFORE THE HOUSE SUBCOMMITTEE ON APPROPRIATIONS
FOR ENERGY AND WATER DEVELOPMENT HEARINGS ON APRIL 1, 1985.

1. Lister Hill Proctor, President, CARI Association, Sylacauga, AL
2. W. M. Rushton, Director Alabama Department of Economic & Community Affairs, Mty., AL
3. Bill Baxley, Lt. Governor, State of Alabama, Birmingham, AL
4. Bill Drinkard, State Senator, Chairman, Joint Interim Legislative Committee on Coosa River Navigation Project, Gadsden, AL
5. Bobby Junkins, State Representative, Vice Chairman, Interim Legislative Committee, Gadsden, AL
6. Bob Thomas, President, Gadsden-Etowah Chamber of Commerce, Gadsden, AL
7. Otha Lee Biggs, Judge of Probate, Monroe County, Monroeville, AL
8. Robert Moman, AL Gas Corporation, Gadsden, AL
9. Juanita Moman, Moman Optical Company, Gadsden, AL
10. Mary George Waite, Vice Pres. for AL, CARI Association, Centre, AL
11. Dan Waite, Retired Businessman, Centre, AL
12. David T. Stockman, Administrator, Montgomery County Commission, Montgomery, AL
13. Joel W. Barfoot, Chairman, Montgomery County Commission, Montgomery, AL
14. W. F. Joseph, Jr., Montgomery County Commission, Montgomery, AL
15. Buddy Trotter, Atty., Montgomery County Commission, Montgomery, AL
16. John F. Knight, Jr., Montgomery County Commission, Montgomery, AL
17. Walter B. Stevenson, Jr., AL DECA, Montgomery, AL
18. J. T. McKenzie, President, Coosa River Action Council, Gadsden, AL
19. Wendell Bryant, Commissioner, Etowah County Commission, Gadsden, AL
20. W. A. Lutes " " " " " "
21. Jesse Burns " " " " " "

22. Phillip Sanguinetti, President, The Anniston Star, Anniston, AL
23. Sue L. Glidewell, Mayor, Rainbow City, AL
24. Vennetta Gray, Businesswoman, Gadsden, AL
25. Floyd Beddingfield, City of Gadsden, AL
26. George Sizemore, City of Gadsden, AL
27. Mrs. Bobby Junkins, Housewife, Gadsden, AL
28. Paula Drinkard, Housewife, Gadsden, AL
29. State Representative Richard Lindsey, Centre, AL
30. Johna Lindsey, Housewife, Centre, AL
31. Tim Parker, Jr., Parker Towing Company, Tuscaloosa, AL
32. Joe Wheeler, Councilman, Pell City, AL
33. State Representative June Bugg, Gadsden, AL
34. Robert F. Henry, Jr., Robert F. Henry Tile Company, Inc., Montgomery, AL
35. Carol Henry, Housewife, Montgomery, AL
36. Fred Henry, Student, Montgomery, AL
37. Lynn Henry, Businesswoman, Atlanta, GA
38. Sid Willingham, Insurance and Real Estate, Rome, GA
39. Burgett H. Mooney, Jr., Vice Pres. for GA, CARIA, Rome, GA
40. Tom Brock Jordan, Businessman, Centre, AL
41. J. T. "Jamie" Jordan, Businessman, Centre, AL
42. George Pullen, City Commissioner, Rome, GA
43. Mrs. George Pullen, Housewife, Rome, GA
44. D. J. Petruccelli, Exec. Vice Pres., Gadsden-Etowah Chamber of Commerce, Gadsden, AL
45. Ralph Meade, Chairman, Cherokee County Commission, Centre, AL
46. Charles Young, Commissioner, Cherokee County, Centre, AL
47. Tommy Miller, Commissioner, Cherokee County, Centre, AL
48. Gerald Dial, State Senator, Gadsden, AL
49. Sheldon L. Morgan, Merchants National Bank, Mobile, AL
50. Nick Barchie, Warrior & Gulf Navigation Company, Chickasaw, AL
51. E. G. "Buddy" Browning, Jr., Alabama State Docks Department, Mobile, AL
52. Mrs. Frank Helderman, Jr., The Gadsden Times, Gadsden, AL
53. Robert Burk, Scott Paper Company, Mobile, AL
54. Leon Torbert, Radcliff Materials, Mobile, AL
55. Marrion Rambeau, Mobile Area Chamber of Commerce, Mobile, AL
56. John L. McCarron, " " " " " "
57. C. R. Carlson, Executive Vice President, CARI Association, Montgomery, AL

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58. Ronald A. Krizman, Executive Vice President/designee, CARI Assoc., Montgomery, AL
59. Ada W. Paravicini, Adm. Assistant, CARI Association, Montgomery, AL
60. Judge Mack Yeargan, Probate Judge, Chilton County, Clanton, AL
61. Derrell Hann, Judge of Probate, Talladega Co., Al
62. Steve Mahaffey, Fin. Dir. " " "
63. Trey (Skip) Smithwick, Dir, Ind. Bd., Talladega Co., Al.
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STATEMENT OF GOV. GEORGE C. WALLACE OF ALABAMA

It is a privilege and a pleasure to address this Subcommittee along with the members of the Coosa-Alabama River Improvement Association in support of navigation on the Alabama-Coosa River System. Specifically, we endorse the request of the Association and its supporters for continued funding during FY 86 of navigation on the Alabama River. We wish to again express our strong support for the full-time operation and the necessary maintenance of the Alabama River waterway.

The Alabama River Waterway provides a vital link into the heartland of Alabama connecting the central Alabama area to the Gulf Port of Mobile and the other waterways of our National Inland Waterway System. It provides a dependable, safe and cost effective method of transportation of materials and products, both industrial and agricultural, as well as providing jobs and opportunities for many in Alabama.

During 1984 there was an increase of 500,000 tons in traffic on the Alabama River. This increase, at a time when traffic on many other waterways declined, indicates that this waterway has become an important factor in the economy of Alabama and the region. Tonnage for 1985 is estimated to be 3 million tons. Scott Paper Company is among the largest of the new users of the Waterway. They have changed their method of moving bulk materials to their Mobile plant and have made major investments in facilities, tow boats and barges.

I support the level of funding in the President's Civil Works Budget Request for FY 1986 for the various projects along the Alabama-Coosa River System with one exception. I support the Association's request for funding the Alabama-Coosa Project in the amount of $9,653,000. This funding is an increment over and above what is needed for regular operation and maintenance expenditures. The extra funds are needed to complete rehabilitation work to improve the reliability of the 9-foot channel during dry seasons in the lower reach of the Alabama River. Preliminary work was begun during FY 85 but was delayed. With the Association's recommended level of funding the Corps should be able to finish the work on schedule in FY 86.

Again this year we are not requesting construction funds for the Coosa River Navigation Project. However, we still believe this project to be of vital importance to Alabama and the entire region. When completed it will no doubt benefit the regional development potential. During 1984 and 1985 action at the State level has removed several obstacles to the project. We are encouraged that these actions may result in a resumption of design and engineering on the Coosa River Project. I commend the members of the Alabama Legislature for passage of legislation in 1984 which amends several technical aspects of the Coosa Valley Development Authority, the non-Federal sponsor of the Coosa River

Project. This year legislation was introduced in the Alabama Legislature to provide adequate State funding for the project as recommended by the Corps of Engineers. This legislation has passed the Alabama State Senate and is currently pending before the Alabama House of Representatives where I expect it to pass soon.

Also I support adequate funding for operation and maintenance of Mobile Harbor. Mobile Harbor is vital to the ongoing operations of the Port of Mobile and the Alabama-Coosa River Waterway. Over the past eight years the State of Alabama has invested over $250 million in expanded and improved Port facilities.

In closing, I would like to pledge my support and again express the intentions of the State of Alabama to adequately meet its responsibilities and obligations for the Alabama-Coosa River project as defined by Congress. I would also like to express thanks for you and all the members of the Subcommittee for your support over the years and for your assistance in insuring adequate funding is provided for the operation and maintenance of the existing Alabama River project and for the progress achieved thus far on the proposed Coosa River project.

STATEMENT OF W.M. "BILL" RUSHTON, DIRECTOR, ALABAMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS

I want to thank you for the opportunity to appear before this Subcommittee along with my fellow Alabamians in support of continued navigation of the Alabama-Coosa River Waterway. Specifically, we endorse the request of the Coosa-Alabama River Improvement Association and its supporters for continued funding of the full-time operation and the necessary maintenance of the Alabama-Coosa River Waterway and of Mobile Harbor during FY 1986.

The existing navigation project on the Alabama River is proving to be, even in these continuing economically depressed times in Alabama, a cost effective method of commercial transportation. Official tonnage for 1983 was 2,605,642 tons with a 1985 estimate of 3 million tons. It has provided for numerous new opportunities and jobs in central and south Alabama. Several new industries have located in the area based on the availability of waterway transportation. In several instances, the waterway has provided for the opportunity to develop resources which are vital to the future of the area, but, could not have been developed without the navigation project. The existing project, in addition to commercial navigation, provides for hydroelectric generation, fish and wildlife enhancement and recreational opportunities, all in harmony with sound environmental policy.

While we support the President's Civil Works Budget Request for FY 1986, we agree with the Association's position that a funding level of $9,653,000 is needed for the Alabama-Coosa Project. This funding level is $2,651,000 above the President's Request and would provide adequate funding for regular Operation and Maintenance expenditures as well as extra funds needed for completion of rehabilitation work to improve the reliability of the 9-foot channel during dry seasons. Even though this work was begun in FY 85, delays have prevented completion. We believe the Association's level of funding would enable the Corps to finish the work on schedule in FY 86.

Also I support adequate funding for operation and maintenance of Mobile Harbor. Mobile Harbor is vital to the ongoing operations of the Port of Mobile and the Alabama-Coosa River Waterway. Over the past eight years the State of Alabama has invested over $250 million in expanded and improved Port facilities.

In closing, I would pledge my support and that of the Alabama Department of Economic and Community Affairs in assisting the State of Alabama to meet its responsibilities and obligations for the Alabama-Coosa River project as defined by Congress. I appreciate the support and assistance which you and all the members of the Subcommittee have given us over the years and for insuring adequate funding is provided for the operation and maintenance of the existing Alabama-Coosa River Project.

Statement of Lt. Gov. Bill Baxley of Alabama

This is not the first time I have come to speak up for the waterways in Alabama and our region. We are very much aware of the value of these resources to the nation as a whole as well as to our own citizens. As all of us look to the future -- both as elected officials and as private individuals -- it is clear the availability of efficient and economical water transportation will be a factor in future economic growth.

As you can see from the large delegation of citizens from Alabama and our neighboring states, we do not take our splendid waterways for granted. We give your subcommittee credit for building and maintaining the waterway system. We understand that there are many other requests for funding. We came to make our views known and appreciate the opportunity to participate in your important deliberations.

As the Lieutenant Governor of Alabama, I am proud of the groups who work on our behalf to develop and protect our waterways. I am sure you agree, Mr. Chairman, that these volunteer officers and other representatives of their associations deserve credit for their contribution.

Mr. Chairman, I endorse the appropriations requests which are being spelled out for you today. I join with my associates in their concern about what increased fuel taxes and ton-mile "fees" will do, both to the ultimate consumer and to the barge industry. Finally, I join in urging that the Federal government retain its traditional role in maintaining the inland waterways.

Thank you very much for your consideration.

Statement of Jamie Etheredge, Director, Alabama Development Office

In Alabama we are very much aware of the contribution our waterways make to our present economy and to our potential for the future.

Mr. Chairman, if it were not for conflicts with my industrial development tasks, I would be with the representatives from Alabama who are speaking up for the waterways today. Our inland waterway system is high on the list of reasons for investing in manufacturing and other enterprises in the United States that we give to overseas industrial prospects.

We are very much concerned with the Administration's proposals for increased fuel taxes or ton-mile fees which would be levied on commercial users of the waterways. The barge and towing industry is already paying a tax on the fuel they use, a tax which will increase to ten cents a gallon this fall. In the very best of circumstances, the barge operators would have to pass most of these increased costs on to the shippers, with an inevitable impact on the consumer. Unfortunately the barge industry is still in a severe recession - in the very worst of circumstances, if you will - and they are in no position to participate in further cost sharing programs.

We urge the Congress to continue the Federal role in maintaining our inland waterways. Particularly important at this time is the Association's request for the additional increment of funding needed to complete the rehabilitation work on the lower stretch of the Alabama River. This work was started in Fiscal Year 1985 and must be finished in Fiscal Year 1986. This can become one of the most active connecting links with the new Tennessee-Tombigbee Waterway, and can contribute substantially to the return from what I am confident will prove to be a prudent Federal and State investment.

Thank you very much for your consideration.

Resolution of Rome (Ga.) Area Chamber of Commerce

WHEREAS, those counties lying within the basin of the Coosa-Alabama Rivers are experiencing economic growth due to the current development program now underway on the rivers and feel this will accelerate even faster when the Coosa-Alabama waterway is fully navigable from Mobile, Alabama, to Rome, Georgia; and,

WHEREAS, extensive commitments to private investment on navigable waterways have been made on the assumption that federal maintenance and operation of the waterways would be continued, and studies of completed waterways such as the Arkansas, and also of the planned Coosa Project, show that the returns fully justify such investment; and,

WHEREAS, waterways provide a competitive alternative for shippers, (rail rates on grain from the mid-West are already lower since opening the Tennessee-Tombigbee); lowered freight rates are in the national interest as manufacturers and farmers compete to improve our balance of payments;

WHEREAS, a public policy decision to invest in an underdeveloped region like the Coosa Valley would strengthen the nation as a whole; and,

WHEREAS, dynamic economic growth, increased hydropower and barge transportation facilities, a more productive way of life, as well as increased recreational enjoyment, are but a few of the numerous benefits that will accrue when this great system is developed;

NOW, THEREFORE BE IT RESOLVED, that the Rome Area Chamber of Commerce approves testimony by the Coosa-Alabama River Improvement Association for support of appropriations on the following projects:

(1) Resumption of design and engineering work on the Coosa Project which was suspended in 1983;
(2) Continued rehabilitation of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne;
(3) Continued federal maintenance and operation of the Alabama River waterway from Mobile to Montgomery;
(4) Continued operation and maintenance of the upstream reservoirs and hydropower plants at Allatoona Lake and Carters Lake in Georgia;
(5) Maintenance and improvement of Mobile Harbor.

We strongly urge appropriations representing the capability of the Corps of Engineers for Fiscal Year 1986.

Approved and adopted in regular session of the Board of Directors this 28th day of February, 1985.

Statement of Joel W. Barfoot, Chairman, Montgomery County (Ala.) Commission

The Montgomery County Commission continues to closely follow the development of the Coosa-Alabama River project which was originally authorized by the Congress in 1945. We believe that the benefits which accrue to the citizens of this region, and to the nation, fully justify the complete construction and operation of this economical waterway.

We fully support the testimony provided by the Coosa-Alabama River Improvement Association. For many years this group has represented us and they accurately reflect our feelings of support for this waterway project.

Of particular interest to us is funding which would permit resuming the design and engineering work on the Coosa Project, which was suspended in 1983.

Also, we feel that the requested appropriation to continue the operation and maintenance of the upstream reservoirs and hydropower plants at Allatoona and Carters Lake in Georgia is essential for the continuity of this project.

We urge your favorable consideration of the recommended appropriations. Adequate funding as requested is necessary to insure that progress is made for further development of the system and to properly operate and maintain the existing portion. Similar information has been sent to Honorable Tom Bevill, Chairman, House Subcommittee on Appropriations for Energy and Water Development, House of Representative, regarding this matter.

STATEMENT OF G.W. JAMES III, DREDGING DIVISION MANAGER, T.L. JAMES & CO.

T. L. James & Company, Inc. is a diversified construction company that owns and operates eight hydraulic cutter-suction dredges along the inland waterways of the Gulf Coast Region. Our Company supports the funding request by the Coosa-Alabama River Improvement Association, Inc. for the Army Corps of Engineers' Operations and Maintenance Budget in fiscal year 1986. Our reasons are outlined in the following paragraphs.

The Army Corps of Engineers' Operations and Maintenance Budget is an important barometer of the economic health of our company, as well as the national dredging industry. Recent cuts in the Corps of Engineers' "O & M" budget have severely impacted the economic health of the dredging industry, an essential national defense industry. Our company lends its support to the efforts being made to return this essential industry to its former strength.

Second, I would like to focus your attention on the fact that the Dredging industry is only one segment of the regional economy that has suffered due to "O & M" budget cuts. Approximately 75% of the revenue from a dredging contract is funneled into the economy of the local community. An additional 10% of our revenue benefits the economy of our home port. Much of the labor employed on our equipment is provided from the local workforce of nearby communities. A payroll account is usually handled by a local bank. Local fuel and hardware suppliers receive approximately half of our revenues in the form of local purchases of those items. It is clear that "O & M" budget cuts impact the health of many other industries in the economy of the communities affected.

A safe and reliable Black Warrior, Tombigbee and Alabama River transportation network is of paramount importance to the water-borne commerce on that network, as well as the health of the regional economy in general. I hope I have clearly outlined for you, from our perspective, the importance to us of the efforts put forth by the Coosa-Alabama River Improvement Association concerning the Army Corps of Engineers "O & M" budget for fiscal year 1986.

LETTER FROM SHELTON PRINCE, PRESIDENT AND PUBLISHER, THE SELMA (ALA.) TIMES-JOURNAL

April 1, 1985

Honorable Mark Hatfield, Chairman
Subcommittee on Appropriations for
Energy and Water Development
United States Senate
Washington, D.C. 20510

Dear Sen. Hatfield:

The purpose of this letter is to express my strong support for the development of the Coosa River and increased maintenance of the Alabama River.

Lister H. Proctor, president of the Coosa-Alabama River Improvement Association, Inc., is testifying before your committee today. He will be expressing the views of a majority of the citizens of Alabama - our state, our region, our nation needs the continued development of the Coosa-Alabama waterway project.

Since I live on the Alabama River, I see the tremendous benefit the river has for the development of a region of the country that is extremely

underdeveloped. And I urge your committee to recommend the continued maintenance and operation of the Alabama River waterway from Mobile to Montgomery.

But the Alabama River will never realize its full potential without the development of the Coosa River. And I hope your committee will favorably consider resuming the design and engineering work on the Coosa Project that was suspended in 1983.

Sincerely,

Shelton Prince
President & Publisher

STATEMENT OF JOHN BENNETT, CITY MANAGER, ROME, GA.

On behalf of the citizens of Rome, Georgia we would like to file the following statement of support.

We believe that water based transportation is an essential and integral part of the national transportation system. It will have an increasing significance in future years because it requires less fuel and less labor per ton-mile when compared to other transportation modes.

It is our view that these projects are not an expense to this nation. They are an investment in our economic development and future.

Therefore we would like to state our support for the following activities in the Coosa-Alabama River area:

1) Resume design and engineering work on the Coosa Project, which was suspended in 1983.

2) Begin rehabilitation of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne.

3) Continue maintenance and operation of the Alabama River waterway from Mobile to Montgomery

4) Continue operation and maintenance of the upstream reservoirs and hydroelectric power plants at Allatoona and Carters Lake in Georgia.

5) Maintain and improve the Mobile Harbor.

We further feel that a public policy decision to invest in an underdeveloped region like the Coosa Valley would strengthen the nation as a whole.

On behalf of the citizens of Rome I wish to thank you in advance for your consideration of these matters.

STATEMENT OF STEPHEN E. HUGHES, DIRECTOR OF PURCHASING AND TRAFFIC, ALABAMA RIVER PULP CO., INC.

Alabama River Pulp Company is pleased to participate in the efforts to improve the Coosa-Alabama Waterway. As the Alabama River channel is improved, we will be expanding our barging operations as much as economically possible to achieve lower transportation cost for incoming raw materials and fuels and outgoing finished product.

We produce bleached market kraft woodpulp both for the domestic and export market. In 1984 we barged no tons of outbound finished product but received 42,000 tons of inbound #6 fuel oil.

For 1985 and future years we estimate 235,000 tons of woodpulp and coal will be barged. Due to the opening of the Tenn-Tom Waterway we currently have two studies underway to determine the economic feasibility of receiving steam coal by barge and barging finished woodpulp to our domestic customers in Wisconsin, Michigan and Ohio that is now shipped by rail. Preliminary findings from these studies indicate barging north to our domestic customers may well be economically feasible with current anticipated costs but if increases in fuel taxes or user charges are introduced into the cost analysis barging may not be economically feasible.

Alabama River Pulp Company's steam coal usage is approximately 60,000 tons annually. Our domestic shipments of finished product considered for barging is approximately 100,000 tons to Wisconsin and Michigan customers and approximately 75,000 tons to customers in Ohio for a total barging volume of 175,000 tons that may be shipped via the Tenn-Tom Waterway. It is our intent to use water transportation whenever economically possible because we predict this mode of transportation will experience the lowest rate of increase over the next decade.

While the Alabama River has an authorized project depth of nine feet and at this level could be sufficient for the Alabama River Pulp Company's barge movement of pulp from the mill to our domestic customers in Wisconsin, Michigan and Ohio, this draft historically has been available to commercial traffic for only approximately nine months each year. An example would be during the late summer and early fall, there is a 90-100 day period of "low water" when the river depths are less than eight feet which restricts usable barge drafts to about seven feet. Conversely, a "high water" period in the spring months produces swift currents making navigation difficult on several critical and narrow bends.

The Corps' Mobile office is congnizant of the aforementioned problem facing commercial interest on the Alabama River and within their discretionary authority, has instituted studies aimed at corrective alternatives. Possible short and intermediate term solutions being evaluated include: increased regulation of water discharges at the Claiborne Lock and Dam which should partially mitigate the seasonal low water problem: modified operational procedures for the Jones Bluff and Millers Ferry projects (up-river) to capture and harness all available water flows above Claiborne: and, additional dikes and "training" structures on the lower River to further confine water-flows, therby increasing depths in critical reaches of the waterway.

Should these alternative prove to be ineffective in solving this long stnading problem on the Alabama River, the Corps has also indicated that it may be necessary to seek funding, as to indentify additional projects or authority needed from the Congress to increase the River's lowflows.

We are please to be located on the Alabama Waterway in Monroe County and look forward to the improvement of this vital waterway. We must all work together to conserve our energy resources in the most efficient manner possible.

We respectfully request your concurrence and recommendation of funding being sought by the Coosa-Alabama River Improvement Association for fiscal year 1985.

STATEMENT OF B.C. HORNADY, MAYOR, MONROEVILLE, ALA.

The Monroeville City Council, Monroeville, Alabama respectfully request that your Senate Subcommittee on Appropriation for Energy and Water Development support the FY 86 request for the Coosa-Alabama River Improvement Association, Inc. to maintain and extend the Coosa-Alabama Waterway System.

The first dam on this great water way system, the Claiborne Lock and Dam, is located in Monroe County Alabama and the series of locks and dams located up-river from Claiborne have been a great economic asset to Monroe County because of the navigation from Mobile to Montgomery. However, the full economic impact for Alabama and Georgia will not be realized until the locks have been constructed on the Coosa portion of this water way system. It is, therefore, requested that design and engineering work on the Coosa Project be resumed which was suspended in 1983. It is further respectfully requested that continued rehabilitation of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne be continued.

So that navigation along the completed sections of the Alabama River can continue uninterrupted, it is hereby requested that favorable approval be given to the Association's FY 86 Budget request for the continued development of the Coosa-Alabama River System.

STATEMENT OF TOM MCKENZIE, PRESIDENT, COOSA RIVER ACTION COUNCIL

The Coosa River Action Council was organized several years ago as an adjunct of the Gadsden-Etowah Chamber of Commerce. Formation of this Council indicated the priority we in Gadsden wanted to give to the task of bringing the navigation channel up the Coosa Valley to Gadsden.

We work hand in hand with the Coosa-Alabama River Improvement Association to insure that our collective efforts are coordinated. We have hosted several meetings of the Association in Gadsden and assisted the Association in forming the Coosa Valley Development Task Force. The Task Force brought together two regional planning commissions - Birmingham and East Alabama. As you would expect, the purpose is to get both private enterprise and the local government officials thinking about how we can best make use of the navigation channel once it is built.

Our Council has watched the steady increase in traffic on the existing Alabama River portion of the navigation channel and anticipate that opening the Tennessee-Tombigbee channel will make the Alabama River even more active. However, experience shows that the channel does need rehabilitation work before it can reach its full potential. We support the Association's $9.65 million request to fund above the Administration Budget Request for maintaining Mobile Harbor.

We appreciate the problems with funding new waterway projects at the present time, although the Coosa River Navigation Project is not new in the sense that is a segment of the development authorized by the Congress in 1945. We will continue to speak up for construction of the Coosa navigation channel.

STATEMENT OF JAMES H. VICK, JR., PRESIDENT, ROME CONCRETE PIPE CO.

Northwest Georgia, Northeast Alabama and especially the Rome, Georgia area needs your foremost consideration. I know how many worthwhile projects you must consider but somehow we have missed the boat in bringing this area's water re-development needs to your attention. This is not a pork barrel request but a chance for this area to bring strength to a region that can help all American citizens by returning their investment with positive results.

I wanted to personally attend the hearing and support the Coosa-Alabama River Improvement Association, Inc. requests for FY86. Please consider my request as part of the collective effort to maintain and extend the waterway.

Our company officers, staff, and employees respectfully request that you make an investment and resume design and engineering work on the Coosa Project.

Supporting our Association requests for FY86 will help Americans in the long haul and that's what we all want. Please put your influence and shoulder to the oar and let's pull together.

Full speed ahead.

STATEMENT OF TIM PARKER, JR., PARKER TOWING CO., INC.

My name is Tim Parker, Jr., and I am Executive Vice President of Parker Towing Company, Inc. I wholeheartedly endorse and support the testimony of Mr. Ray Carlson, Executive Vice President of the Coosa-Alabama Improvement Association, and his request to you for adequate operational and maintenance funding for the Coosa-Alabama River system.

Parker Towing Company operates a fleet of one hundred-thirty (130) hopper barges, fifteen (15) towboats and four (4) tank barges. We have been providing barge transportation service to Alabama shippers for almost fifty (50) years.

The Coosa-Alabama is important to the economic well-being of Alabama. A wide variety of items are shipped by barge on the Coosa-Alabama, including not only agricultural commodities, but also iron and steel articles, petroleum and chemical products, paper and forest products, and sand and gravel, just to name a few. This diversification clearly indicates the broad economic impact that this waterway has on the health of business and commerce in Alabama.

There is a continuing need to improve the reliability and efficiency of the river channel. As a member of the Coosa-Alabama River Improvement Association, I respectfully request that you continue to adequately fund the operational and maintenance requirements of this River.

I respectfully oppose any increases in user fees, segment fees, or cost sharing. Increases in freight rates from any cause, whether it be from more user fees, segment fees, etc. will lessen the competitiveness of barge transportation and thus the benefits that it provides for many industries. Any efforts that can be made to keep freight rates as low as possible will be rewarded with increased trade and industrial growth in our region.

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Statement of Parker A. Narrows, President, Montgomery (Ala.) Area Chamber of Commerce

As you are aware the Montgomery Area Chamber of Commerce has, since 1890, strongly supported the development of the Coosa-Alabama River System because we have always believed that such development is vital to the cultural, industrial and economic development of Alabama and the southeastern United States. Today with the rapid total development of the whole "Sunbelt" area this need is greater than ever before.

Studies have been made and presented which fully justify the beliefs we have held and show the array of benefits, never before possible, which will result from the total utilization of this great river system. For without this integral transportation system the unemployment picture in this region could be even more severe.

We are well aware of and are most grateful for your strong support of this project and request that you and your committee approve the appropriations requested for the Coosa-Alabama River System for the fiscal year 1986. We will be most grateful for your continued enthusiastic support for this most worthwhile project.

Statement of Harvey C. Watson, Mayor, Pell City, Ala.

The City of Pell City strongly supports the Coosa-Alabama River Improvement Association requests for Fiscal Year 1986 and the City is a part of a collective effort to maintain and extend the waterway.

Pell City's principal concern throughout the years has been the design and engineering work on the Coosa Project. We have considered ourselves realistic in supporting the earlier development of the Alabama River but now we feel is the time to resume the work on the Coosa Project that was suspended in 1983.

The Alabama River waterway from Mobile to Montgomery must have continued Federal maintenance for continued operation.

A public policy decision to invest in an underdeveloped region like the Coosa Valley would strengthen the nation as a whole and studies of completed waterways such as the planned Coosa Project show that the returns fully justify the investment.

We respectfully request that you support the program for the development of the river system and the navigation project.

Statement of James T. Jordan, Centre, Ala.

I support the Coosa-Alabama River Improvement Association's requests for FY86 wholeheartedly. I am also a part of a collective effort to maintain and extend the waterway which is badly needed for the State of Alabama and the nation as a whole. We need to resume design and the engineering work on the Coosa Project, which was suspended in 1983.

One other point that I would like to emphasize is the waterways provide efficient transportation productivity that lowers the inflation and reducesnational deficits. When inflation is lowered,this helps all of us! We also need to have lowered freight rates because this helps the farmers complete with the manufacturers to improve our balance of payments.

An undeveloped region like the Coosa Valley would strengthen the nation as a whole because studies of completed waterways show that the returns fully justify the investment.

I sincerely hope that this project can be continued.

Statement of Taylor Hardin, Vice President, Central Bank of the South

I sincerely regret that it will not be possible for me to appear personally before your Committee on April 1 in support of the delegation appearing on behalf of the Coosa-Alabama River Improvement Association. However, with your permission, I would like to submit the following as indicative of my interest and support for the project which they represent.

In both my private and professional activities I have a keen interest in the further industrial development of Alabama and our southeastern region. I also realize that despite the progress achieved in recent years we still have much to do and that we are needful of the consideration and assistance of those of like mind at regional and national level such as yourself and the members of your Committee.

I also understand the vital importance of water resources and transportation in the development and enhancement of the economy of any region. This knowledge convinces me of the viability of the Coosa-Alabama project and the impact it will have on the economy of the area. All of this comes at a time during which our nation, our region and our states are exerting every effort to achieve and maintain an econmic edge in highly competitive environment. I believe that the continued development of this waterway will materially assist in this effort. It will accelerate the flow of commerce, lessen cost of transportation, contribute to the development of a relatively virgin area and would serve to enhance the nation's economy as a whole.

For these and many other reasons not recounted, I unreservedly support the position of the Association and its requested appropriation for FY '86 so as to ensure that the impetus previously established will not be lost. I am confident that the state of Alabama as well as the private sector of our economy stands ready to pledge support to this effort once convinced that the support of your Committee and of the Congress is forthcoming.

Specifically, my colleagues and I would respectfully suggest the resumption of design and engineering work on the Coosa Project; the continued federal maintenance and operation of the Alabama River Waterway from Mobile to Montgomery and continued maintenance and improvement of the Mobile Harbor.

Again, my regrets at not being able to be present for this occasion and my sincere request and anticipation that you will act favorably on the proposals of the delegation.

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STATEMENT OF ROBERT M. HOPE, DIRECTOR, ALABAMA STATE DOCKS DEPARTMENT

It is again a pleasure to appear before this Committee along with my fellow Alabamians in support of navigation on the Alabama and Coosa Rivers. The Alabama River connects the heart of Alabama to the Gulf Port of Mobile and the Gulf Intercoastal Waterway, and is an integral part of our State and national Inland Navigation System.

Again, Mr. Chairman, we would like to thank you and your associates for your continued interest in and dedication to the great Waterway Systems of our United States.

The prosperity for this country is greatly enhanced by the national inland waterway system which provides a major conduit for export and import of raw materials as well as finished products, and it assists us greatly in the balance of trade with other nations and provides transportation of materials and products at the lowest cost possible to and from deep water ports such as Mobile. The System is a major contributor to this country's competitiveness in world markets.

Our own Alabama-Coosa River System provides an economical and energy effective method of transporting products and materials between the Port of Mobile and the heartland of Alabama. It benefits commercial and industrial interests as well as agricultural interests in offering an economical method of producing and transporting the products that the world needs for nourishment and for sustaining a quality standard of life.

We join with and support Mr. Ray Carlson, Executive Vice President of the Coosa-Alabama River Improvement Association, as well as other members of the Association in their testimony on behalf of continued funding for the full-time operation and necessary maintenance of this Waterway

System, and we are part of a collective effort to maintain and extend the Waterway.

As you are aware, lower freight rates produced by the Waterway give manufacturers and farmers a better chance at export markets, and this System has proven in its short life to be cost effective. Each year additional materials and products move on this System, and with the recent completion of the Tennessee-Tombigbee Waterway the navigation of the Alabama River segment is even more important.

The State of Alabama has expended millions of dollars in support of navigation of the Alabama-Coosa System by providing the nonfederal support required. The Alabama State Docks Department has expended within the last eight years in excess of two hundred and fifty million dollars in renovations, refurbishings, and new construction projects at the terminal port to place itself in a position to handle increased cargoes entering and exiting the Port which have previous or subsequent movement on the inland waterway systems of Alabama.

We wholeheartedly support the individual project needs expressed by the Coosa-Alabama River Improvement Association, and in concert with the Association and the Governor of the State of Alabama we again request full funding for this vital navigation project.

The inland navigation system is an integral part of the national transportation system of the United States which the State of Alabama as well as other states and private enterprise have invested large sums of money over the years. The total impact of these water transportation corridors on the continued vitality of our nation should never be under estimated.

STATEMENT OF CARL A. TORBERT, JR., PRESIDENT, DRAVO NATURAL RESOURCES CO.

We respectfully request your consideration and approval of the following projects on the Coosa-Alabama River System for fiscal year 1986:

1) Resume Coosa River Navigation Project.
2) Continued rehabilitation of training dykes and modification of dredging profile for the Alabama River Channel below Claiborne Lock & Dam.
3) Operation and maintenance - Claiborne Lock & Dam.
4) Operation and maintenance - Millers Ferry Lock & Dam.
5) Operation and maintenance - Robert F. Henry Lock & Dam.
6) Operation and maintenance - reservoirs and hydro-electric stations.
7) Operation, maintenance, improvements and deepening of Mobile Harbor.

We support the testimony of the Coosa-Alabama River Improvement Association and we join the efforts of its membership to maintain and extend the waterway to make the benefits of low cost, energy efficient water transportation available to a broader economic base.

Radcliff Materials, Inc. is one of the leading producers of construction raw materials and aggregates on the Gulf Coast. We rely extensively on the waterways of Alabama, Florida, Louisiana, Mississippi and Texas for production and delivery of our products. In 1984 we produced and moved via Alabama waterways over 1,250,000 tons of sand and gravel. We also transported over 700,000 tons of limestone and clay as well as significant quantities of other products. Our projections for 1985 are:

Sand and Gravel	1,500,000 tons
Other	750,000 tons.

Radcliff Materials, Inc. operates a fleet of 23 boats, 85 barges and 7 dredges. We maintain a large terminal and handling facility on McDuffie Island in Mobile, Alabama in addition to numerous support facilities throughout South Alabama and the Gulf Coast.

The maintenance of authorized project dimensions is essential for the efficient, orderly production and delivery of materials throughout the waterway system. Drought conditions in 1984 resulted in low flows on the Alabama River. Fortunately, through the efforts of the Army Corps of Engineers and their maintenance dredging program, the cooperation of users and operators on the Alabama River and a lot of luck, navigation was maintained throughout the year even though draft restrictions did limit tow capacities. This condition emphasizes the need for the Corps to have the capability of overcoming extreme conditions in meeting its assigned task of operating and maintaining an efficient, orderly waterway system. In order to provide this capability, it is imperative not only that the Army Corps of Engineers be provided with the appropriations as per their budget requests, but also with the additional funds required to insure the Corps has the flexibility and capability to fully realize the potential of the Coosa-Alabama River System and the Port of Mobile.

We sincerely appreciate the Committee's faith in the future of the great waterway systems of the State of Alabama and welcome its continued support of these vital projects.

STATEMENT OF OTHA LEE BIGGS, PRESIDENT, MONROE COUNTY (ALA.) COMMISSION

The Monroe County Commission, Monroe County Alabama respectfully request that your House Subcommittee on appropriation for Energy and Water Development support the Coosa-Alabama River Improvement Association, inc., request for FY 86 to maintain and extend the Coosa-Alabama Waterway System.

The first dam on this great water way system, the Claiborne Lock and Dam is located in Monroe County Alabama and the series of locks and dams located up-river from Claiborne have been a great economic asset to Monroe County because of the navigation from Mobile to Montgomery. However, the full economic impact for Alabama and Georgia will not be realized until the locks have been constructed on the Coosa portion of this water way system. It is, therefore requested that design and engineering work on the Coosa Project be resumed, which was suspended in 1983. It is further respectfully requested that continued rehabilitation of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne be continued.

So that navigation along the completed sections of the Alabama River can continue uninterrupted it is hereby requested that favorable approval be given to the Association's FY 86 Budget request for the continued development of the Coosa-Alabama River System.

STATEMENT OF JAMES A. PIERCE, DIRECTOR OF TRANSPORTATION, MISSISSIPPI CHEMICAL CORP.

Mississippi Chemical Corporation wishes to join with the Coosa-Alabama River Improvement Association and other users in a collective effort to secure continued funding for fiscal 1986 for the Coosa-Alabama Rivers.

Mississippi Chemical operates a storage facility in Montgomery, Alabama for the distribution of its dry, bulk fertilizers. This facility was established in 1973 to take advantage of the lower cost water transportation in our continuing efforts to hold down distribution costs, which directly affect the cost of fertilizers to the farmer.

The fertilizer market has been in a slump for the past several years, but prior to that time around thirty-two barges per year (or approximately 42,000 tons) were shipped up the Alabama River to the Montgomery facility. The use of water transportation for this amount of tonnage produces an annual freight savings of around $305,000 using 1984 freight costs.

The Alabama River and its continued maintenance by the U. S. Corps of Engineers is vitally important in maintaining a reliable low-cost transportation artery. As you are aware, transportation costs are reflected in the sales price of a product; and as fertilizer is a key element in farm production, any cost increase has a direct adverse effect on farm profit margins. Continued maintenance of a nine-foot channel is essential in being able to fully realize the savings advantage of water transportation to this market area.

Your continued support in this area is greatly appreciated.

STATEMENT OF B.A. REYNOLDS, DIRECTOR OF GOVERNMENT AND COMMUNITY AFFAIRS, DISCO ALUMINUM PRODUCTS CO., INC.

A delegation from the Coosa-Alabama River Improvement Association is scheduled to appear before the House Subcommittee today, April 1, 1985.

It is respectfully requested that the Committee approve the following appropriations contained in the F.Y. 1986 budget to resume design and engineering work on the Coosa project which was suspended in 1983 for the development of the Coosa River and to complete the project from Rome, Georgia to Mobile, Alabama, would be a good investment to the United States as a whole; not just the area which it serves. The returns as proposed by the Corps of Engineers show that this project will more than justify this investment. Also, I feel that they have shown through studies of the Corps that Mobile harbor will become one of the largest harbors on the Gulf Coast now that the Tennessee/Tombigee project has been completed. You might say, that the economical benefits of the Coosa-Alabama project have been clearly substantiated. I would like to point out that waterways are most energy-efficient -- and this project would benefit not only our region, but also the nation as a whole.

Extensive commitments to private investment on navigable waterways have been made on the assumption that Federal maintenance and operation of the waterways would be continued.

STATEMENT OF JOSEPH M. FARLEY, ALABAMA POWER CO.

Alabama Power Company considers the Coosa-Alabama River Improvement Association's efforts to be in the best interest of the state of Alabama. Specifically, I would mention that we support the continued operation and maintenance of the reservoirs and hydroelectric generating plants at Allatoona and Carters Dam. Each is vital in the interest of flood control mitigation throughout the entire Coosa-Alabama River basin, as well as the continued augmentation of flows to support navigation interest on the Alabama River.

An increasing volume of business interests within our state are dependent on the ability to barge ship directly to the Port of Mobile. To meet this need, the availability of a dependable navigation channel in the lower Alabama River is essential. It has become quite clear that a nine-foot channel cannot be maintained based on discharges from upstream reservoirs alone. The rehabilitation of training dikes and modification of dredging profiles should be continued to enhance the implementation and maintenance of an adequate navigational channel.

It is also in the business interest of all within our state to encourage the continued review and assessment of economically sound methods to improve delivery of raw materials to potential markets. Based on this interest, Alabama Power Company continues to support an appropriate level of activity associated with maintenance of the Alabama River channel and development of a navigable waterway described as the Coosa Project.

STATEMENT OF O.P. WOODRUFF, JUDGE OF PROBATE, LOWNDES COUNTY, ALA.

I urge you to support the Coosa-Alabama River Improvement Associations request for FY 86 and to encourage your friends and constituents support.

A decision to invest in an undeveloped region like the Coosa Valley would strengthen the nation as a whole and lower freight rates are in the national imterest as manufacturers and farmers compete to improve our balance of payments. Waterways provide a competitive alternative for shippers.

As a native of Lowndes County, I am aware of how much this means to our county and hope to see engineering work resume on the Coosa Alabama Project.

Thank you for your help and continued support.

RESOLUTION OF SYLACAUGA, ALA.

WHEREAS, the Coosa-Alabama River Improvement Association, Incorporated has worked diligently to make the Coosa and Alabama Rivers navigable; and

WHEREAS, since the State of Alabama has high unemployment and the effect of making these rivers navigable will create more employment; and

WHEREAS, by these rivers being navigable, the transportation cost should be decreased therefore making the products cheaper to the consumer which, in turn, will help keep inflation low; and

WHEREAS, studies of completed waterways such as the Arkansas, and also the planned Coosa Project, show that the returns fully justify the investment; and

WHEREAS, a public policy decision to invest in an underdeveloped region like the Coosa Valley would strengthen the nation as a whole;

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Sylacauga, Alabama that this is the time for an investment in the future economic strength of our nation; and

BE IT FURTHER RESOLVED, that the City Council respectfully request that the Congress of the United States appropriate the necessary monies to resume the design and engineering work on the Coosa Project which was suspended in 1983 and to complete this project so that this navigable waterway may be a contributing investment economically to our country.

ADOPTED this 6th day of March, 1985.

Jesse L. Cleveland

Jesse Cleveland, President Pro Tem

APPROVED this 6th day of March, 1985.

Gene E. Stewart

Gene E. Stewart, Mayor

STATEMENT OF MYLES E. PATTERSON, WETUMPKA, ALA.

I regret that I will not be with our delegation on the date of the hearing.

I neverthe less would like for you to know of my whole-hearted support for the Association's request for FY86 and am proud to be a part of a collective effort to maintain and extent the waterway.

I would like to express my interest in maintaining and improving Mobile Harbor. I further would like to express myself regarding a public policy decision to invest in an under-developed region like the Coosa Valley and believe it would strengthen the nation as a whole.

STATEMENT OF BOB THOMAS, PRESIDENT, GADSDEN-ETOWAH (ALA.) CHAMBER OF COMMERCE

The Gadsden-Etowah Chamber of Commerce has been vitally interested in the Coosa River Navigation Project ever since we were first organized. As you may know, the impetus for much of this activity originated in Gadsden where the Coosa-Alabama River Improvement Association was organized in 1890. In those days we had a bustling, profitable steamboat industry moving passengers, cargo and mail from Greenport, Alabama to Rome and Calhoun, Georgia. Gadsden was the main port on our stretch of the river.

Our grandparents tell us about the importance of river transportation in the early development of our community. They also tell about the frustrations of river captains who were landlocked; who did not have a river navigable to the oceanport of Mobile.

The Chamber is proud of our legislators from Gadsden who are obtaining the funding for the non-Federal costs of the Project. We support them and applaud their foresight. The waterway can be an important stimlus to an economy that includes the largest radial passenger car tire plant in the world and a steel plant that needs the benefits of economical water transportation.

We in Gadsden urge your approval of the funding requests made by the Coosa-Alabama River Improvement Association for the existing projects. Also, we assure you that we will continue to remind you of the potential of an investment in bringing the navigation channel to Gadsden.

STATEMENT OF HENRY A. LESLIE, PRESIDENT, UNION BANK & TRUST CO., MONTGOMERY, ALA.

I am writing to you in support of the Coosa Alabama River Improvement Association's request for Fiscal Year 1986 and I would like for you to know that this Institution is a member of the organization and that we are certainly part of the collective effort to maintain and extend the waterway.

Waterways, such as the Coosa Alabama River Project, provide efficient transportation that certainly will lower inflation and assist in reducing the national deficit. Studies of completed waterways, such as the one in Arkansas and also the planned Coosa Project, certainly show that returns justify the investment.

Thus, I hope that it will be possible to resume the design and engineering work on the Coosa Project, which was suspended in 1983.

We will appreciate your favorable consideration of the Association's request.

STATEMENT OF B.H. MOONEY, JR., PUBLISHER, ROME (GA.) NEWS-TRIBUNE

Our newspaper has recognized for many years the vast potential that lies within the scope of the Coosa-Alabama River System. Completion of the system will directly enhance the economic well-being of countless thousands of citizens.

Your Sub-Committee has looked with favor upon this program in the past and all of us closely involved are grateful. We know that you are also aware that completion of the program as rapidly as possible is in the best interest of both the government and the people.

We specifically ask that you resume design and engineering work on the Coosa Project, which was suspended in 1983. Also maintenance and operation monies for Alabama River, Allatoona, Carter's Lake, Claiborne, Jones Bluff and Millers Ferry dams and locks, and improving the Mobile Harbor.

We earnestly solicit your continued support and urge that favorable consideration to be given to the total Fiscal Year 1986 request.

STATEMENT OF GEORGE P. WALTHALL, JR., PRESIDENT, PRATTVILLE (ALA.) AREA CHAMBER OF COMMERCE

The Prattville Area Chamber of Commerce fully supports the Coosa-Alabama River Improvement Association fiscal requests for FY86. We join many others whose interests are in maintaining the Alabama River open to expanding commerce. Autauga County borders the Alabama River. Industrial property is available on a navigable river due to the efforts of this fine Association and the previous support of the Congress of the United States.

Extensive commitments to private investment on the Alabama River have been made in the past based on continued Federal maintenance and operation. Therefore, we fully support continued Federal maintenance and operation of the Alabama from Mobile to Montgomery.

Directly tied to the above is the necessity to make Mobile a deep water port and continue to improve the harbor for defense of the Gulf Coast and for International Trade. Waterways always provide a competitive alternative for shippers and studies of completed waterways show that the returns fully justify the Federal investment.

STATEMENT OF JOHN CLARK, CHAIRMAN, AMSOUTH BANK, SELMA, ALA.

I would like to go on record in support of continuing appropriations for FY86 in connection with the Coosa-Alabama River Improvement Association project. Any economic benefit which will result in the continued development of this waterway could not be better directed to an area which continues to experience poverty, outmigration, and depressed social and economic conditions.

The recent review by the University of Alabama focused on the quality of life in Alabama's black-belt through which moch of the Alabama River flows. The study was made in December 1984 and reveals this area is substantially below the national average in all segments of the economy, particularly education, housing, per capita income and industrail development.

Your continued support for this project is urgently requested.

STATEMENT OF DON L. HARRELL, JR., BIRMINGHAM, ALA.

We strongly support the testimony and funding requests of the Coosa-Alabama River Improvement Association. We join in the regional effort to improve and extend the Alabama-Coosa Waterway. We feel that there is an immediate need to extend the commercial navigation channel from Montgomery to Gadsden, Alabama. The extension of the river system to Gadsden will not only benefit an area that has been extremely hard hit by a depressed economy, but will take advantage of the lower costs, energy efficient barge transportation. We estimate that we would ship between 100,000 and 300,000 tons of crushed slag and stone from our Gadsden plants to the Montgomery and south markets, if the river were navigatable.

The Alabama River has proven to be a good investment. We feel that the money needed in the operations and maintenance area, to complete the rehabilitation work on the training dikes and the new dredging, is essential in order to improve the channel's reliability and to help the Alabama River reach its designed potential. Waterways provide efficient transportation productivity that, in turn lowers inflation and we need to utilize our given resources to the betterment of the people of our nation. The completion of this project will be an investment in the future of our region and nation.

STATEMENT OF BILLY JOE DRIVER, MAYOR, CLANTON, ALA.

Although I will be unable to join the delegation in Washington, I want you to know that the Association has our full support of requests for FY86.

There are two particular facets of interest to us:

Resume design and engineering work on the Coosa Project which was suspended in 1983

Continue Federal maintenance and operation of the Alabama River waterway from Mobile to Montgomery

I would also like to point out that the inclusion of these two items will be of real economical value as well as all the other values it can be to this area. Lowered freight rates are in the national interest as manufactuers and farmers compete to improve our balance of payments.

Wishing you and the Association all the best in your efforts on behalf of not only Clanton and Alabama and our area but the rest of the country as well, I remain

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STATEMENT OF PHILLIP A. SANQUINETTI, PRESIDENT, THE ANNISTON STAR, ALABAMA

I am writing you in behalf of the Coosa Alabama River Improvement Association, Inc., and also to give you the feeling of this part of Alabama. Although Anniston is not directly on the Coosa River, we realize the great influence that making the Coosa navigable to Rome, Georgia, would have on both Alabama and Georgia.

We feel that the Association's request for FY 86 should be granted and efforts to maintain and extend the waterway should esume immediately. We should continue maintenance and operation of Alabama River waterway from Mobile to Montgomery and, further, we feel that a public policy decision to invest in an underdeveloped region like the Coosa Valley would not only strengthen Alabama and Georgia but would further strengthen the nation.

We appreciate your fine efforts in the past and hope that you will continue to be successful in furthering this most critical project. Thank you.

1980

RESOLUTION OF DALLAS COUNTY, ALA.

WHEREAS there will be hearings on the fiscal year 1986 budget in Washington, D.C., on April 1, 1985; and

WHEREAS the Coosa-Alabama River Improvement Association, Inc. is requesting funding for maintaining and extending the Alabama River waterway; and

WHEREAS the extending and maintaining of the Alabama River waterway would be an integral part of the proposed port facility in Dallas County; and

WHEREAS this proposed port facility in Dallas County could possibly provide a number of jobs for the area and lower freight rates for the manfacturers and farmers of this area making the export market more accessible to them.

NOW THEREFORE BE IT RESOLVED BY THE DALLAS COUNTY COMMISSION OF DALLAS COUNTY, ALABAMA, that this Commission fully supports the Coosa-Alabama River Improvement Association, Inc. in its request for FY86 and that this Commission is a part of a collective effort to maintain and extend the Alabama River waterway.

DONE this the 26th day of March, 1985.

Probate Judge and Ex-Officio Chairman
Dallas County Commission
Dallas County, Alabama

STATEMENT OF JERRY BAKER, PRESIDENT, CHEROKEE (ALA.) CHAMBER OF COMMERCE

We support the Coosa-Alabama River Improvement Association requests for fiscal year 1986. We are part of a collective effort to maintain and extend the waterway. We feel the waterway would help keep freight rates at a lower level. This would certainly be in the national interest as manufacturers and farmers compete to improve our balance of payments. We urge you to support the Coosa-Alabama River project.

Thank you for your consideration and support.

STATEMENT OF N.A. NICOLSON, IDEAL BASIC INDUSTRIES, ALABAMA

Ideal Basic Industries endorses the efforts of the Coosa-Alabama River Improvement Association in requesting funds in the 1986 fiscal year to continue the development of the Alabama and Coosa Rivers and Mobile Harbor.

Ideal Basic Industries, with its substantial investment in south Alabama, is vitally interested in the continued improvement in Alabama's waterway system.

STATEMENT OF M.B. RAMBEAU, MOBILE AREA CHAMBER OF COMMERCE

On behalf of the 3,300 members of the Mobile Area Chamber of Commerce, I would like to take this opportunity to express our support for continued improvement to the Coosa-Alabama River system.

This river system plays a vital role in the shipment of international commerce (export/import) through the Port of Mobile and in turn assists in our international balance of payments with other nations.

We further respectfully request that the fiscal year 1986 budget include sufficient funds to meet the Corps of Engineers capability for the overall operation and maintenance of this project.

STATEMENT OF C.T. "BUDDY" BLANKENSHIP, CHAIRMAN, FLOYD COUNTY (GA.) BOARD OF COMMISSIONERS

The Floyd County Board of Commissioners wish to encourage and support the efforts to resume work on the Coosa River navigation project.

The continued operation and maintenance of the reservoirs and hydropower plants at Allatoona and Carters Lake in Georgia is vital to the Rome-Floyd community. These hydroelectric generating facilities are indispensable if the area's underdeveloped economy and industrial base are to remain stable, expand, and help to produce the new growth and further development that must occur in this area of the State and Nation.

Studies of completed waterways such as the Arkansas, and also the planned Coosa project, show that the returns fully justify the investment.

STATEMENT OF BART ARNOLD, MAYOR, RAGLAND, ALA.

As mayor of the town of Ragland, I regret that I am unable to be with the delegation. I strongly support the association request for fiscal year 1986 and am a part of a collective effort to maintain and extend the waterway.

It is my interest to see the design and engineering work on the Coosa project resumed, which was suspended in 1983.

It is also a proven fact waterways provide efficient transportation productivity that lowers inflation and reduces national deficits. Studies of completed waterways such as the Arkansas, and also of the planned Coosa project, show that the returns fully justify the investment.

Thank you for your consideration.

STATEMENT OF SUE L. GLIDEWELL, MAYOR, RAINBOW CITY, ALA.

I am writing to ask your support once again for the Coosa-Alabama River Improvement Association fiscal year 1986 budget request. I continue to be in support of a collective effort to maintain and extend the waterway which is of vital importance to this area.

I know you will agree with me that waterways provide efficient transportation productivity that lowers inflation and reduces national deficits which are of great concern to all of us. Rail rates on grain from the Midwest are already lower since opening the Tenn-Tom Waterway. Studies of completed waterways such as the Arkansas show that the returns fully justify the cost of investment and I sincerely trust that you will study the planned Coosa project and be in support of the design and engineering work which was suspended in 1983.

Thank you for your consideration in this matter.

STATEMENT OF E.B. STEFFEY, PLANT MANAGER, THE GOODYEAR TIRE & RUBBER CO.

The Goodyear Tire & Rubber Co. supports the development of the Coosa River project. When this project is completed it will be beneficial to Goodyear and the surrounding areas.

We feel this is an investment in the Southeast and we can commit at this time 8,641 tons of crude and synthetic rubber plus to transportation by barge.

STATEMENT OF J.N. NICHOLS, VICE PRESIDENT–OPERATIONS, GULF STATES STEEL CORP.

As a firm that will benefit from the development of the Coosa River, we urge your support of the Coosa-Alabama River Improvement Association's request for fiscal year 1986. We request that your committee support the association's efforts to have the design and engineering work on the Coosa project resumed. The full potential of this waterway cannot be realized until it is opened for barge traffic from Montgomery to Rome, Ga.

We, as residents on the Coosa River, have a stake in its development and solicit your support in providing the necessary funds.

STATEMENT OF J.H. NOLEN, WETUMPKA, ALA.

This is in support of the fiscal year 1986 collective effort being made to maintain and extend the waterway. Surely we can justify the continuation of Federal maintenance and operation of the Alabama River Waterway from Mobile to Montgomery.

It is a generally accepted fact that waterways provide cheaper and more efficient transportation, reducing inflation and lowering the deficit. Studies of completed waterways and of the planned Coosa project show that the returns fully justify the investment.

STATEMENT OF MACK YEARGAN, CHAIRMAN, CHILTON COUNTY (ALA.) COMMISSION

The Chilton County Commission is in full support of the Coosa-Alabama River Improvement Association and the effort to maintain and extend the waterway. The completion of the Coosa River navigation project will enhance the economy of Chilton County considerably. A policy decision to invest in an undeveloped region like the Coosa Valley would strengthen the Nation as a whole.

STATEMENT OF J.B. STRIPLIN, PRESIDENT, BANK OF PRATTVILLE, ALABAMA

I am unable to be with the delegation from the Coosa-Alabama River Improvement Association. However, I support the association's requests for fiscal year 1986 and am a part of a collective effort to maintain and extend the Coosa-Alabama River projects.

I feel that design and engineering work on the Coosa project, which was suspended in 1983, should be resumed and maintenance and operation of the Alabama River Waterway from Mobile to Montgomery should be continued. Extensive commitments to private investment on navigable waterways have been made on the assumption that Federal maintenance and operation of the waterways would be continued.

Your consideration for this request will be appreciated.

STATEMENT OF ANNE HENRY TIDMORE, MONTGOMERY, ALA.

I am writing on behalf of the Coosa River project which I firmly believe in and which I hope to see passed through Congress this year.

The Coosa project seems to be an idea whose time has finally come! I hope that the appropriations will be made so that our entire area would benefit as a result, and indeed, the Nation as a whole.

I will certainly appreciate your help in this matter.

STATEMENT OF ROBERT F. HENRY, JR., MONTGOMERY, ALA.

We certainly support the Coosa-Alabama River Improvement Association in its efforts to maintain and to further develop this river system. We urge that the fiscal year 1986 budget contain the funding to support this program.

Particularly we urge the maintenance of the existing waterway system between Mobile and Montgomery, Ala. Also, we think the next steps should be taken toward navigation on the Coosa River.

STATEMENT OF CHRIS B. HEINZ, SELMA, ALA.

It has been my pleasure to attend your meetings for over a quarter of a century and I regret that I cannot personally attend this year.

We know that you will continue to support the Coosa-Alabama request for work on the Coosa project. I wish to thank you for all you have done in the past.

As you know, Alabama has more rivers than any other State in the Union and we certainly need to use them to their fullest extent.

STATEMENT OF BOBBY GENTRY, PRESIDENT, MONROEVILLE (ALA.) AREA CHAMBER OF COMMERCE

The Monroeville Area Chamber of Comerce, Monroe County, Ala., respectfully requests that the Subcommittee for Energy and Water Development support the Coosa-Alabama River Improvement Association request for fiscal year 1986 to maintain and extend the Coosa-Alabama Waterway system.

The first dam on this great waterway system, the Claiborne lock and dam, is located in Monroe County and the series of locks and dams located up-river from Claiborne have been a great economic asset to Monroe County because of the navigation from Mobile to Montgomery. However, the full economic impact for Alabama and Georgia will not be realized until the locks have been constructed on the Coosa portion of this waterway system. It is, therefore, requested that design and engineering work on the Coosa project be resumed, which was suspended in 1983. It is further respectfullly requested that continued rehabilitation of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne be continued.

So that navigation along the completed sections of the Alabama River can continue uninterrupted, it is hereby requested that favorable approval be given to the association's fiscal year 1986 budget request for the continued development of the Coosa-Alabama River system.

STATEMENT OF W.R. HUDSON, P&S MARINE SUPERINTENDENT, MARINE BUILDERS AND REPAIR CO.

In 1984, P&S Marine transported 49 percent more fertilizer over the Coosa-Alabama Waterway than we did in 1983. We are anticipating an increase of 10 percent in 1985 over 1984.

P&S Marine emphatically supports the Coosa-Alabama River Improvement Association's requested funds for fiscal year 1986.

P&S Marine is an operator of tugboats and we oppose the 10-percent user tax fee that is scheduled for October this year. We are against any segment fees and cost sharing because this industry is at an all-time low.

Thank you for your cooperation.

STATEMENT OF SHELDON L. MORGAN, SENIOR VICE PRESIDENT, MERCHANTS NATIONAL BANK OF MOBILE

This statement is rendered in behalf of the Coosa-Alabama River project on which design and engineering work was suspended in 1983. The resumption of that work is important for the continuation of the project toward the ultimate completion of the river basin improvements.

We also would like to request that the committee approve the necessary funds for operation and maintenance of the waterway portion that has already been improved between Mobile and Montgomery. That is vital to investments, both public and privte, which have been made on the system.

Thank you for your consideration.

STATEMENT OF JERRY CRAWFORD, PRESIDENT, ROME MANUFACTURING CO.

A great deal of time and money has already been invested in the Coosa project. There is every indication that expansion and development of this waterway can produce a cost-efficient transportation link. Unfortunately, design and engineering on this project was suspended in 1983, before there was an opportunity to assess the full impact that development of this important waterway could have on our area and much of the Southeast.

I would like to encourage you toresume funding for the design and engineering work on the Coosa project.

STATEMENT OF SID WILLINGHAM, ROME, GA.

It would be appreciated if your committee would give serious consideration to the request from the Coosa-Alabama River Improvement Association, Inc., who will have a delegation attending the hearings that will be held on April 1, 1985, in Washington, asking that work be resumed on the design and engineering work on the Coosa project and the continuation of Federal maintenance and operation of the Alabama Waterway from Mobile to Montgomery and also continue operation and maintenance of the upstream reservoirs and hydropower plants at Allatoona and Carters Lake in Georgia for fiscal year 1986.

We feel that opening the Coosa-Alabama River from Mobile, Ala., to Rome, Ga., in the Coosa Valley would strengthen the Nation as a whole, just as it has in Arkansas. Studies already made show that the returns fully justify the investment.

STATEMENT OF EDWARD L. KING, JR., PRESIDENT, FIRST ALABAMA BANK

I am writing to you requesting that you support, wholeheartedly, efforts to resume design and engineering work on the Coosa-Alabama River project which was suspended in 1983. I feel that the results of other waterways, such as the Arkansas, show that public moneys invested in these projects (Coosa project) yield rewards that fully justify the funds. The economic benefits derived from more efficient transportation and consequent lower freight rates definitely have an impact on both inflation and the national deficit. Consequently, such a project not only benefits the underdeveloped

regions like the Coosa Valley, but also has a lasting effect and strengthening of the Nation as a whole.

I support this project and urge you to do likewise.

STATEMENT OF MORRIS MOATTS, EXECUTIVE VICE PRESIDENT, CHILTON COUNTY (ALA.) CHAMBER OF COMMERCE

The Chilton County Chamber of Commerce is very supportive of the Coosa-Alabama River Improvement Association, Inc., efforts to maintain and extend the waterway, and particularly would like to see resumed design and engineering work on the Coosa project which was suspended in 1983. It is so important that Federal maintenance and operation of the Alabama Riverway from Mobile to Montgomery continue.

The decision to invest in an underdeveloped region like the Coosa Valley would strengthen the Nation as a whole, while opening up an entire new area for economic growth throughout a large portion of Alabama. The return of investment have been shown to be justifiable according to studies of completed waterways such as the Arkansas and proposed Coosa project.

Your consideration and active support is greatly appreciated.

STATEMENT OF WAYMOND ADAMS, JR., VICE PRESIDENT, UNION STATE BANK, ALABAMA

We are joining in a collective effort to maintain and extend the Coosa River Waterway and would like to express our support for the Coosa-Alabama River Improvement Association's request for fiscal year 1986.

We feel that the design and engineering work on the Coosa project, which was suspended in 1983, should be resumed. The waterway, upon completion, would provide efficient transportation at a lowered freight rate, thereby strengthening our economy as a whole helping to lower inflation.

Studies of the planned Coosa project show the returns justify the expenditures and investments necessary to complete it.

Your help and influence will be greatly appreciated.

1986

APALACHICOLA-CHATTAHOOCHEE-FLINT WATERWAY

STATEMENT OF H. BAXTER HARCOURT, PRESIDENT, TRI-RIVERS WATERWAY DEVELOPMENT ASSOCIATION

SUMMARY

TRI-RIVERS WATERWAY DEVELOPMENT ASSOCIATION

REQUEST FOR FY 1986 FUNDING

The Apalachicola-Chattahoochee-Flint Waterway

Operations and Maintenance $4,751,000

Studies (Continuation of "308"). . $ 479,000

April 1, 1985

Thank you, Chairman Bevill and members of the subcommittee, for this opportunity to present the needs of the Apalachicola-Chattahoochee-Flint Waterway as we see them.

I am Baxter Harcourt of Columbus, Ga., president of the Tri-Rivers Waterway Development Association. While our association has its headquarters in Dothan, Ala., I want you to know it is a three-state association with very substantial support in Alabama, Georgia and Northwest Florida.

We come here today in gratitude for the new beginning which Congress made possible by funding the relocation of troublesome rocks in the Apalachicola river last year. The investment is already producing results. It enabled the Corps of Engineers during 1984 to provide the authorized shipping channel an additional 15 percent of the time. Cargo tonnage increased by 75 percent over the previous year - to 1.2 million tons, an ACF record.

All three states shared in the increase. The newest public port on the system, the Jackson County Port at Sneads, Fla., went from less than 60,000 tons in 1983 to 207,000 tons in 1984. It had never handled more than 83,000 tons in any previous year.

The 1984 record is still a long way from our goal of 5 million tons, but we are convinced now that the goal is attainable. Tri-State interests are working together unselfishly to make it happen.

Soon after our visit with you last year, Tri-Rivers, the Georgia Ports Authority and the Georgia General Assembly commissioned a 32-county market study to find the most desirable industries for our area and to design strategies for attracting or developing them. To make sure the study met local needs and involved the people who would be using the findings, a carefully selected advisory committee guided the work of the private consultants. The study was completed in October. Area planning and development commissions then held workshops in five locations to help chambers of commerce and local governments understand and use the study report.

We did not limit the study to industries that would ship on the waterway. However, the study turned up evidence that the waterway represents an important catalyst for improvement throughout the area economy. Just to shift 1.6 tons of cargo already moving by other modes to cheaper barge transportation, the study showed,

would create 1,800 jobs and add $30 million a year in personal income. When there is enough traffic on the system to provide backhauls, the study found, 3.2 million tons of existing cargo could move more cost-effectively by barge. This is without any new industry or agri-business.

If our communities could acquire just 10 of the industries recommended - one in each category - that would create nearly 10,000 jobs and generate $300 million in personal income. It would add $15 million to state and local tax receipts. Such growth would make a strong impact on a region where 25 percent of the population now lives below the poverty level.

The next three to five years are critical. The waterway must in this time stimulate economic activity and attract tonnage sufficient to justify continued operation. The new channel must prove itself to shippers and dispel its old negative reputation. We believe it stands a good chance.

The best possible operation and maintenance of the system during this critical time is essential. The President's budget requests $2,996,000 for operation and maintenance, a 26 percent reduction from the current $4,060,000 and much less than the $4,495,820 annual average which the Corps actually spent on the system from 1980 through 1984.

The Corps has a stated "capability" for the ACF system of $4,751,000. In view of the opportunities now at hand, we ask you to fund operations and maintenance of the ACF waterway for the full $4,751,000.

There is in the President's proposed budget $479,000 for studies on the ACF waterway. We support this request. These funds will allow the Corps to resolve some issues identified in a 1983 memorandum of agreement by the States of Alabama, Georgia and Florida and the Corps and to continue its basinwide "308" study after the MOA expires in October, 1985.

A $250,000 Congressional appropriation allowed the Corps to resume the dormant 308 study this year. That appropriation is currently funding investigations outside the scope of the MOA committee, including a water use demand projection by the Savannah District of the Corps and research into interstate mechanisms for waterway cooperation by the Institute for Water Resources.

The MOA committee has brought better understanding and co-operation among the three states and is moving on schedule with publication of a water assessment, a drought management plan and - in October, 1985 - a navigation management plan. Our hope is that completion of the 308 study no later than FY 1989 will bring all interests into consensus on the future of the ACF waterway.

Whether or not the ACF waterway can fulfill its potential depends to a great extent on what action Congress takes on user charges. Additional taxes like those now being proposed by the Administration would kill the resurgence. The barge industry is just now recovering from an industry-wide depression. We urge you to resist imposing additional waterway taxes until the towing companies have regained sufficient strength to survive and compete as part of the total transportation network.

Thank you.

1988

April 5, 1985

The removal of rock obstructions by the Corps of Engineers early in 1984 sparked a new beginning on the Apalachicola-Chattahoochee-Flint Waterway. Cargo tonnage, which had been declining, increased by 75 percent, to 1.2 million tons for the year.

All three states shared in the increase. The newest public port on the system, the Jackson County Port at Sneads, Fla., went from less than 60,000 tons in 1983 to 207,000 tons in 1984. It had never handled more than 83,000 tons in any previous year.

Soon after our visit with you last year, Tri-Rivers, the Georgia Ports Authority and the Georgia General Assembly commissioned a 32-county market study to find the most desirable industries for our area and to design strategies for attracting or developing them. To make sure the study met local needs and involved the people who would be using the findings, a carefully selected advisory committee guided the work of the private consultants. The study was completed in October. Area planning and development commissions then held workshops in five locations to help chambers of commerce and local governments understand and use the study report.

We did not limit the study to industries that would ship on the waterway. However, the study turned up evidence that the waterway represents an important catalyst for improvement throughout the area economy. Just to shift 1.6 tons of cargo already moving by other modes to cheaper barge transportation, the study showed, would create 1,800 jobs and add $30 million a year in personal income. When there is enough traffic on the system to provide backhauls, the study found, 3.2 million tons of existing cargo could move more cost-effectively by barge. This is without any new industry or agri-business.

If our communities could acquire just 10 of the industries recommended - one in each category - that would create nearly 10,000 jobs and generate $300 million in personal income. It would add $15 million to state and local tax receipts. Such growth would make a strong impact on a region where 25 percent of the population now lives below the poverty level.

The next three to five years are critical. The waterway must in this time stimulate economic activity and attract tonnage sufficient to justify continued operation. The new channel must prove itself to shippers and dispel its old negative reputation. We believe it stands a good change.

The best possible operation and maintenance of the system during this critical time is essential. The President's budget requests $2,996,000 for operation and maintenance, a 26 percent reduction from the current $4,060,000 and much less than the $4,495,820 annual average which the Corps actually spent on the system from 1980 through 1984.

The Corps has a stated "capability" for the ACF system of $4,751,000. In view of the opportunities now at hand, we ask you to fund operations and maintenance of the ACF waterway for the full $4,751,000.

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1989

A $250,000 Congressional appropriation allowed the Corps to resume the dormant 308 study this year. That appropriation is currently funding investigations outside the scope of the MOA committee, including a water use demand projection by the Savannah District of the Corps and research into interstate mechanisms for waterway cooperation by the Institute for Water Resources.

The MOA committee has brought better understanding and co-operation among the three states and is moving on schedule with publication of a water assessment, a drought management plan and - in October, 1985 - a navigation management plan. Our hope is that completion of the 308 study no later than FY 1989 will bring all interests into consensus on the future of the ACF waterway.

Whether or not the ACF waterway can fulfill its potential depends to a great extent on what action Congress takes on user charges. Additional taxes like those now being proposed by the Administration would kill the resurgence. The barge industry is just now recovering from an industry-wide depression. We urge you to resist imposing additional waterway taxes until the towing companies have regained sufficient strength to survive and compete as part of the total transportation network.

1990

STATEMENT OF ROBERT D. MILES, CHAIRMAN, GEORGIA PORTS AUTHORITY

Chairman Devill and members of the Sub-Committee, I am Robert D. Miles of Brunswick, Georgia, Chairman of the Georgia Ports Authority. It is my pleasure to present testimony on behalf of the Authority and to commend this Committee for your unceasing efforts in activating the necessary funding to provide us with a river system that is environmentally sound and commercially feasible.

After only one year of operation as a viable 9 foot channel, the ACF Waterway System has generated a 75 percent tonnage increase, effectively reducing by nearly one-half the Federal costs per ton of cargo moving on the System.

For the first time in history tonnages on the River System are climbing at all terminals along the Waterway. This past year a record 1.2 million tons of cargo flowed on the ACF tracking well with our goal of 5 million tons by 1990.

The tonnage surge now being experienced all along the System is directly attributed to the channel improvements completed by the U. S. Corps of Engineers in February 1983 and their continued efforts of maintenance teamed with their excellent management program.

A recent study, conceived, implemented and funded by the Tri-River Association, the Georgia Ports Authority and the State of Georgia has identified 3.2 million tons of potential waterborne commerce now being generated by industrial and agricultural activities within the 19,000 square mile Tri-River Basin.

This cargo has been targeted as the number one priority to kindle commerce for the now viable waterway.

Local industrial entities throughout the Basin are actively pursuing compatible industries, identified in the study, to locate along the System.

After two decades of frustrations, we are at last witnessing the commercial viability of the Waterway awaking to its full potential. It is a beginning.

To maintain this momentum, it is essential that users of the System be assured of the continued operations and maintenance programs of the Corps which will, with adequate funding, provide a 9 foot channel 95 percent of the time by October of this year.

The President's budget requests $2,996,000 for operation and maintenance of the ACF System. The U.S. Corps of Engineers stated "capability" for the System is $4,751,000. As we hover at this crucial period in the rebirth of the ACF Waterway, we strongly urge this Committee to lend its support to the full-funding of $4,751,000 for operation and maintenance of the ACF System.

We fully support the continuation of the Corps 308 Study which has been allocated $470,000 in the President's proposed budget.

In closing allow me a few comments regarding the myriad of pending legislation concerning User Fees as they pertain to our National Inland Waterway System.

In 1980, a 4 cents per gallon fuel tax was imposed on waterway users with provisions for a gradual increase to a maximum of 10 cents per gallon. The fee is now 8 cents and is scheduled to rise to 10 cents October 1, this year.

Since implementation, this fuel tax user fee has accrued approximately $160 million to the Inland Waterways Trust Fund which has remained untouched by the Federal Government in that the Fund, as constituted, is to be used only for new construction. An amendment, I understand, is forthcoming to include operations and maintenance funding flexibility to the Trust.

It is our understanding that the fuel tax will remain in place regardless of the outcome of additional user fee legislation.

Of the several user fee bills now pending in the 99th Congress, those concerning waterways break down into two categories - Segment Specific and a Uniform assessment per ton mile.

Any form of Segment Specific user fees would be catastrophic for any embryonic waterway system (ie: ACF and the Tennessee-Tombigbee Systems) and, we feel, it would induce a slow strangulation to the total U. S. network of inland waterways systems.

The uniform assessment user fee based on a per ton mile as proposed in various forms of legislation would add 1 to 1.5 mills per ton mile to all movements on the National System.

At this particular point in time, this assessment coupled to the afore mentioned fuel tax would be sufficient to scuttle the already depressed barge transport industry.

Thank you.

SUBCOMMITTEE RECESS

Senator SASSER. With that, the subcommittee will stand in recess.

[Whereupon, at 12:42 p.m., Monday, April 1, the subcommittee was recessed to reconvene at 10 a.m. Tuesday, April 2.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1986

TUESDAY, APRIL 2, 1985

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m. in room SD–192, Dirksen Senate Office Building, Hon. John Stennis presiding.

Present: Senators Cochran, Mattingly, Stennis, and Sasser; also present: Senator Bumpers.

NONDEPARTMENTAL WITNESSES

LOWER MISSISSIPPI VALLEY FLOOD CONTROL PROJECTS

OPENING REMARKS

Senator STENNIS. First, ladies and gentlemen, I want to give you a special word of welcome for being here today and at the same time a word of congratulations, too, for your interest that is shown by your presence here. We all owe you a word of thanks, too, for your support of programs of this kind throughout the years.

I understand the Lower Mississippi Valley Flood Control Association has consistently appeared here for at least 35 years in support, not only of their own area, but in support of the nationwide water programs of various kinds, which has proven to be one of the greatest assets that we have, of natural resources tamed and directed by man, and the payoff has been tremendous.

So we are divided up here now, the Senate is, on the many committees and subcommittees and all that we have. We have a large number of Appropriations subcommittees meeting this week. We only have 13 of those. It takes up the membership. But I can assure you of the interest of virtually every Member of the entire body in these matters.

Now the sad thing is that we don't have a modern authorization bill or program for expanding, extending, and further improving our water resources system, I will call it, nationwide. It has been more than 10 years, I am ashamed to have to announce it, since we have had what we used to call the annual or semiannual authorization bill authorizing these projects and programs. They cannot be appropriated until they are authorized. And there is need for it, not as great as it was, but there is still need.

The trouble is that argument over the user fees or how much is the local person going to have to pay. That idea of charging some from that source has undoubtedly gotten control of a great deal of the thinking of the Nation. Frankly, they haven't agreed yet to anything that we think is really proper under the circumstances. But I am proud of the fact that we have carried on, we are continuing this work, and I am satisfied it will be properly revived.

You know, since World War II, we have just literally had to pour out billions of dollars, many billions of dollars, for military preparedness or military protection due to world affairs of other nations and their attitude. I am dizzy from some of those figures on those committees, too. But we are not going to get caught short there, although I don't believe in throwing away money, even if it is labeled defense money.

The membership is interested, I know, as I have been on this subcommittee since the second year I came here. No program is better supported, supported by the Senators. They are at these other meetings now but they will be here when possible. I am sure Senator Cochran will be here and I think others might come even if only for a few minutes. It is my privilege to be here with you.

STATEMENT OF HON. BILL EMERSON, U.S. REPRESENTATIVE FROM MISSOURI; AND PRESIDENT, LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION

Senator STENNIS. If it is agreeable to everyone now, we will just proceed with the first group.

Mr. T.M. Simmons, chairman of the executive committee, Lower Mississippi Valley Flood Control Association. I have called on you. But you proceed in the order that you may select. Ordinarily you would say a few words first and then you direct them. Everyone will be given as much time as they really need, but we will keep things moving.

Welcome to you all.

Mr. EMERSON. Mr. Chairman, I am Congressman Bill Emerson from the Eighth Congressional District of Missouri. I appreciate very much the opportunity to appear before you today on behalf of the people of my district. In addition to representing the Eighth Congressional District, I also serve as president of the Lower Mississippi Valley Flood Control Association. It is in that position that I am here today to introduce the speakers and to encourage you to give a high priority to the entire Mississippi River and tributaries project that will be discussed.

The Lower Mississippi Valley Flood Control Association has served the people in the valley continuously for 50 years. Since my congressional district contains more bank line of the Mississippi River than any other, I am particularly well aware of the good that has been accomplished by the Mississippi River and tributaries project through the effects of this association and certainly with the help and understanding that has always been shown by this subcommittee.

The association comes before you today with a full understanding of the complex budgetary problems we are facing. They will be showing support for the budget and concerns for control of our deficits. They

will also be discussing serious problems and making suggestions to this committee as to possible solutions within the overall budget restraints.

I personally thank you for your time and consideration. It is my pleasure now to introduce to you the speakers in the order that they will appear.

Mr. T.M. Simmons, chairman of the executive committee of the Lower Mississippi Valley Flood Control Association and president of the Yazoo-Mississippi Delta Levee Board of Clarksdale, Miss.; Mr. Burrell B. Fair, chief engineer, St. Francis Levee District of Arkansas, West Memphis, Ark.; Joe F. Mooney, chief engineer, Yazoo-Mississippi Delta Levee Board, Clarksdale, Miss.; and Ronald Besson, president, West Jefferson Levee District, Marrero, La.

Once again, Mr. Chairman, I thank you for your wonderful time and attention that you are giving to us here. I know that these people will give you some interesting commentary. We look forward to working further with you and cooperating with you on these matters as the year progresses.

Senator STENNIS. All right. We have just had this word now from the real president of the association, the Honorable Bill Emerson of Missouri. He is well known here and I am sure in this area of his fine work and his interest.

PREPARED STATEMENT OF SENATOR PRYOR

We have been joined, too, by another committee member, Senator Sasser of Tennessee. He covers the mountains and the sea and all, never still.

I am glad you could get here, Senator.

Senator SASSER. Thank you, Mr. Chairman.

Senator STENNIS. Do you have a special word you want to say now?

Senator SASSER. No, Mr. Chairman. I thank you for the opportunity. But I am here today to hear some of the witnesses.

Senator STENNIS. Now, we have a statement from Senator Pryor, and there could be others, which I will simply make part of the record, if there is no objection.

[The statement follows:]

STATEMENT OF SENATOR PRYOR

Mr. Chairman, I want to take this opportunity to express my gratitude to you and to the members of this committee for making this time available for public witnesses to testify in behalf of civil works projects in the lower Mississippi River Valley, the Ouachita River Valley, and the Red River Valley.

While I realize that current budgetary restraints will play a major role in determining the level of funding the Congress is able to provide for individual projects, I believe it is important to continue development of sound civil works projects that have been thoroughly scrutinized by both the Congress and administrations, past and present. It has been said many times over that these projects are investments in the future of our Nation. Indeed, they are, for what investment broker would suggest to a client that he reject any investment that would return two and three and four times his money.

We need the input of these representatives who can speak to our particular needs in Arkansas, Louisiana, Mississippi, Tennessee, and Missouri. I hope you will carefully consider their suggestions and recommendations.

Mr. Chairman, as you will recall, I have had an ongoing interest for the past 3 years in the development of the Felsenthal National Wildlife Refuge as a part of the Ouachita-Black River navigation project. This refuge is a part of the mitigation package for the development and, for the past 3 years, I have been trying to convince the Army Corps of Engineers to complete the development of the 11 public access and management sites as presented in the master plan developed by the Corps.

I am submitting for the committee's review a copy of an opinion prepared at my request by the American Law Division of the Congressional Research Service. This opinion addresses the legality of the Army's actions with respect to congressional guidance provided by this committee last year. It concludes that neither Senate Appropriations report language or floor colloquies are sufficiently binding upon Army officials to render their failure to utilize funds for this construction an illegal impoundment.

I thought, last year, that we had agreement to resolve this problem, and I would like to continue in that vein. Accordingly, I am asking the committee, in behalf of the people of south Arkansas, to appropriate in a line item $4.5 million in fiscal year 1986 for the continued construction of recreational access sites at the Felsenthal National Wildlife Refuge according to the Army Corps of Engineers' master plan. Local assurances of operation and maintenance have been given by the responsible Arkansas communities. The additional $1 million will place the project back on its original funding track and, hopefully, allow completion of the project at its previously intended pace, since only $2.5 was intended last year.

Mr. Chairman, I am also vitally interested in the continued progress on the Red River and I know you will hear from those representatives this morning. The supporters of the Red River—the members of the Red River Valley Association—are keenly aware of the serious nature of the current budgetary cycle. The Red River navigation project has received sharp reductions in the President's budget request, yet the levels he has proposed will allow for a major part of the work to be completed in fiscal year 1986. The membership of the RRVA is satisfied with this, and, wishing to do their part in helping to reduce the Federal deficit, they do not propose major increases in this project to the committee.

Mr. Chairman, I do want to offer my support and pledge any assistance I can provide for the following Red River project needs: Red River Waterways, Shreveport to Index, $520,000; Red River emergency bank protection, $15.1 million; Red River levees and bank stabilization below Denison Dam, $19.7 million; Days Creek/Nix Creek restudy, $300,000; a study of bank stabilization, Index to Denison Dam, $350,000; and a project the Corps of Engineers has labeled reshaping levees, $500,000.

The bank stabilization projects I have mentioned are absolutely vital to the continuation and future growth of the entire Red River Valley. Without them there will be no further navigation beyond Shreveport, and I think we've all agreed for some time now that we must go beyond Shreveport to reap the full intended benefits of the navigation project. The figures I have suggested represent Corps capabilities, and I hope the committee will give serious consideration to funding these projects at those levels.

The studies that I am requesting funding for are each vital and need to be kept active for reasons I have already mentioned.

Mr. Chairman, during the past year I have served as president of the Lower Mississippi Valley Flood Control Association. At this time I would like to reemphasize my support for the projects of this group and endorse the President's budget requests for the projects of the lower Mississippi Valley.

Mr. Chairman, thank you for this time and for your kind consideration of my requests. Please don't hesitate to call on me when my support will be needed with this legislation.

-LETTER FROM M. MAUREEN MURPHY, LEGISLATIVE ATTORNEY, CONGRESSIONAL RESEARCH SERVICE THE LIBRARY OF CONGRESS

January 9, 1985

TO : Honorable David Pryor
Attn: Carmie Henry

FROM : American Law Division

SUBJECT: Whether the Corps of Engineers is Required by Law to Continue Construction of the Felsenthal Wildlife Refuge

This responds to your recent inquiry concerning the apparent decision by the Corps of Engineers not to continue construction of the Felsenthal Wildlife Refuge, despite the fact that $2,500,000 for this project was included in the 1985 Energy and Water Development Appropriation Act. Pub. L. 98-360, 98 Stat. 403, 98th Cong., 2d Sess. (1984). We have concluded that there is no legal requirement that any of these funds be allocated to the Felsenthal Wildlife Refuge.

The sum for the Felsenthal Wildlife Refuge is included in a lump-sum appropriation of $864,500,000[1/] for "Construction, General." 98 Stat. 403. The Conference Report, H. Rep. 98-866, 98th Cong., 2d Sess. 18 (1984), indicates that Congress intended that part of the funds be applied as follows:

> The conference agreement includes $3,500,000 for the Ouachita and Black Rivers project, including $2,500,000 to continue the construction of access sites and recreational areas of Felsenthal National Wildlife Refuge, Arkansas.

The Energy and Water Development Appropriation Act of 1984, Pub. L. 98-50, 97 Stat. 247, 98th Cong., 1st Sess. (1983), included a similar lump-sum appropriation with language in the legislative history as to intended application:

> The conferees are aware of Congressional testimony on the need to construct access points and recreational facilities on the Ouachita and Black Rivers in the vicinity of the Felsenthal National Wildlife Refuge, Arkansas, in the Felsenthal Pool. Testimony indicates significant prior commitments to local interests to

> provide access roads, boat ramps, recreation and sanitary facilities. Accordingly the conferees have included funds in the bill for the Corps to proceed with the work consistent with prior commitments.
>
> H. Rep. 98-272 98th Cong., 1st Sess. 12 (1983).

The Supplemental Appropriations Act, 1983, Pub. L. 98-63, 97th Stat. 301, 98th Cong., 1st sess. (1983), also included a lump-sum appropriation with language of intent in the legislative history:

> The Committee has received testimony on the need to construct access points and recreation facilities on the Ouachita and Black Rivers in the vicinity of Felsenthal National Wildlife Refuge, Ark., in the Felsenthal Pool. Testimony indicates significant prior commitments to local interests to provide access roads, boat ramps, recreation and sanitary facilities. Accordingly within available funds the Corps is directed to proceed with this work consistent with prior commitments.
>
> S. Rep. 98-148, 98th Cong., 1st Sess. 39 (1983). 2/

To summarize, in the 1984 and 1985 appropriation measures, Congress appropriated lump sums for "Construction, General" programs of the Corps of Engineers and included language in legislative history directing obligation of a portion of that lump sum to the Felsenthal Wildlife Refuge. Such restrictions on the expenditure of the lump-sum appropriations would not seem to be legally binding on the Department of the Army. Supporting this conclusion are federal court decisions and rulings of the Comptroller General.

In Train v. City of New York, 420 U.S. 35, 45 (1975), a case involving interpretation of an appropriation measure, the Supreme Court stated succinctly the controlling principle that the courts would apply to the facts of the Felsenthal Wildlife Refuge 1984 and 1985 appropriations: "legislative intention, without more, is not legislation." The General Accounting Office in its Principles of Appropriation Law, 5-95 (1982), considers this "one of the most important principles of appropriations law":

> Restrictions on a lump-sum appropriation contained in the agency's budget request or in legislative history are not legally binding on the department or agency unless they are carried into (specified in) the appropriation act itself. 3/

A recent decision of the United States Court of Appeals for the District of Columbia, International Union, United Automobile, Aerospace & Agricultural Implement Workers of America v. Donovan No. 83-2082 (D.C. Cir., Oct. 23, 1984), dealt with the question of whether an agency was required to spend any of the funds of a lump-sum appropriation for one of the specific programs of that appropriation in addition to spending specific funds that were earmarked by the statute for that program. There were various statements in the legislative history in support of allocating additional funds. The court, however did not view these as controlling in the absence of specific statutory language:

> This legislative history is relevant to our inquiry -- but not directly relevant....The issue here is not how Congress expected or intended the Secretary to behave, but how it required him to behave, through the only means by which it can (as far as the courts are concerned, at least) require anything -- the enactment of legislation. Our focus, in other words, must be the text of the appropriation.
>
> Lump-sum appropriations are a common feature of the legislative landscape, and we are not prepared to approach their interpretation by assuming that they are inherently ambiguous, capable of meaning either that no funds need be spent on any particular included program, or (as the Secretary seems to assert here) that no funds could be spent on a particular one, or that the funds must be distributed among all included programs in a given fashion -- all as the committee reports and other entrails of legislative history might suggest. We think to the contrary, that the lump-sum appropriation has a well-understood meaning, and that the legislative history described above does not give content to an ambiguous enactment but rather reflects the congressional comprehension of a clear one. A lump-sum appropriation leaves it to the recipient agency (as a matter of law, at least) to distribute the funds among some or all of the permissible objects as it sees fit.
>
> International Union, United Automobile, Aerospace & Agricultural Implement Workers of America, slip op., at 11-12.

To support its conclusion the court drew upon the established and consistent practice of the Comptroller General to view lump-sum appropriations as not requiring agencies to allocate the sums in any particular manner and distinguished lump-sum appropriation questions from illegal impoundment cases such as Train v. City of New York, 420 U.S. 34 (1975); City of Los Angeles v. Adams, 445 F.2d 40 (D.C. Cir. 1977); Sioux Valley Empire Electric Association v. Butz, 405 F.2d 168 (8th Cir. 1974); State Highway Commission v. Volpe, 479 F.2d 1099 (8th Cir. 1973); and National Council of Community Health Centers, Inc. v. Weinberger, 361 F. Supp. 897 (D.D.C. 1973). The impoundment cases do not involve lump-sum appropriations, but rather funds specifically designated for a program or funds for an entitlement program specifically required by statute.

The leading General Accounting Office decision, LTV Aerospace Corp., B-183-851, Oct. 1, 1975, 55 Comp. Gen. 307, involved the question of whether a Department of Navy contract against a lump-sum appropriation for a Navy Air Combat Fighter was void as contrary to law since it was not in conformance with the report of the Conference Committee. The Comptroller General ruled in favor of the contract. The report language actually set up a prerequisite for the use of the funds that the contract did not meet. The opinion notes that the lump-sum appropriation method is used by Congress to preserve flexibility for the executive branch so that the agencies can respond to unanticipated contingencies:

> This is not to say that Congress does not expect that funds will be spent in accordance with budget estimates or in accordance with restrictions detailed in Committee reports. However, in order to preserve spending flexibility, it may choose not to impose 'these restrictions as a matter of law, but rather leave it to the agencies to keep faith' with the Congress.
>
> 55 Comp Gen. 307, 318.

It also notes that Congress has a method to inhibit agency ability to apply funds among various programs:

> ...when Congress does not intend to permit agency flexibility, but intends to impose a legally binding restriction on an agency's use of funds, it does so by means of explicit statutory language.
> 55 Comp Gen. 307, 318.

The Comptroller General generalized as to the meaning of lump-sum appropriations as follows:

> ...it is our view when Congress merely appropriates lump-sum amounts without statutorily restricting what can be done with these funds a clear inference arises that it does not intend to impose legally binding restrictions, and indicia in committee reports and other legislative history as to how the funds should or are expected to be spent do not establish any legal requirements on federal agencies.
> 55 Comp. Gen. 307, 319.

The situation, then, for the 1984 and 1985 appropriation for the Corps of Engineers is that the Corps is authorized certain lump sums for construction, and general purpose, one application of which could be for the Felsenthal Wildlife Refuge. Despite language in the committee reports to the effect that portions of these lump sums are to be spent on the wildlife refuge, no statutory language[4/] obliges the Corps of Engineers to obligate any sum to this project.[5/]

We hope this information aids you and that you will call upon our office if you need further assistance.

1/ The statutory language is as follows: "For the prosecution of river and harbors, flood control, shore protection, and related projects authorized by laws; and detailed studies and plans and specifications, of projects (including those for development and participation or under consideration for participation by States, local governments, or private groups) authorized or made eligible for selection by law (but such studies shall not constitute a commitment of the Government to construction), $864,500,000, to remain available until expended, of which [thereafter follow particular restrictions, none of which applies to Felsenthal Wildlife Refuge]...."
Pub. L. 98-360, 98 Stat. 403, 98th Cong., 2d Sess. (1984).

2/ The Conference Report, H. Rep. 98-308, 98th Cong., 1st Sess. (1983), did not specifically allude to the Felsenthal National Wildlife Refuge. The Report of the House Committee on Appropriations, H. Rep. 98-207 98th Cong., 1st Sess. 38 (1983) included the same language as quoted from the Senate Report.

3/ Restrictions on lump-sum appropriations may appear in other statutes and will be legally binding. U.S. General Accounting Office, Principles of Federal Appropriations Law, 5-103 (1982). In TVA v. Hill, 437 U.S. 153 (1978), the Supreme Court held that the Endangered Species Act's protections for the natural habitat of an endangered species applied to an appropriation measure despite expression in the legislative history of the appropriation bill that the committees of Congress dealing with the legislation thought that the Endangered Species Act did not apply.

4/ At least in the apropriation acts.

5/ An attempt to include a statutory requirement in the Continuing Resolution for fiscal 1985, Pub. L. 98-473, succeeded in the Senate, 130 Cong. Rec. S13165, Oct. 3, 1984 (daily ed.), but was eliminated in the Conference Report. H. Rep. 98-1159, 98th Cong., 2d Sess. (1984), as appearing in 130 Cong. Rec. H11854, Oct. 10, 1984 (daily ed). The amendment read:

> The Secretary of the Army acting through the Chief of Engineers is directed to utilize $2.5 million of funds previously appropriated for Felsenthal National Wildlife Refuge, Arkansas, for the developing of recreational facilities as authorized by law.
>
> S. Amdt 7028 to H.J. Res. 648, 98th Cong., 2d Sess. (1984).

STATEMENT OF T.M. SIMMONS, CHAIRMAN, EXECUTIVE COMMITTEE, LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION, AND PRESIDENT, YAZOO-MISSISSIPPI DELTA LEVEE BOARD

Senator STENNIS. All right. We are glad to have all of you again. I will repeat that emphasis. Congressman, who is your first witness?

Mr. EMERSON. Mr. Simmons.

Mr. SIMMONS. Thank you, Congressman Emerson. I appreciate the introduction.

Mr. Chairman, and members of the committee, my name is Mark Simmons. I am a cotton, corn, and bean farmer from Belzoni, Miss. It gives us a great pleasure, and as you reminded the group a while ago, we have appeared here for 35 years. It gives the Mississippi delegation a whole lot of pleasure to appear before our senior Senator that is chairing our committee today.

I am also president of the Yazoo-Mississippi Delta Levee Board of Clarksdale, Miss, and also serve as chairman of the executive committee of the Lower Mississippi Valley Flood Control Association and I appear here as spokesman for that association.

I will present several items of general interest to all our membership and then call on others of our group to testify concerning specific items. Mr. Chairman, I assure you we will be as brief as possible.

ASSOCIATION MEMBERSHIP

Our association is somewhat unique in that it is composed almost entirely of public bodies having local responsibility in the parts of Illinois, Kentucky, Missouri, Tennessee, Arkansas, Mississippi, and Louisiana involved for prosecuting flood control, drainage, navigation, and related improvements.

The rather large delegation accompanying me today is composed therefore of public officials who, for the most part, are elected by the people. Our association has been serving the people of the lower Mississippi Valley continuously for 50 years, and today we will again be addressing problems concerning the Mississippi River and tributaries project.

Most of the members of this subcommittee have become intimately acquainted with this project through the years and have considerable pride in their long support of it. For the benefit of others, let me state briefly that the primary purpose of the project is to protect the approximately 28,000 square miles of the alluvial valley beginning at Cape Girardeau, Mo., and extending to the Gulf of Mexico. The system of works which has been constructed since the great disaster of 1927 is designed to protect this vital agricultural and industrial area from the floodwaters of approximately 41 percent of the mainland United States plus parts of two Canadian provinces. The project is about 76 percent complete and to date the Federal Government has spent approximately $3.5 billion over a period of 56 years. During that same period, the project has prevented damages estimated at $100 billion. In our opinion, that makes this project one of the best investments of the Federal Government.

PROJECT COST SHARING

Prior to the Federal Government's involvement in 1928, the local people spent hundreds of millions of dollars in a futile attempt to protect themselves from the devastating floodwaters flowing from a drainage area largely outside the States in the valley. As one engineer so eloquently stated, "The cost sharing on the Mississippi River and tributaries project has been paid in advance." The Congress in its wisdom realized the national responsibility in 1928 and they stated that, "No local contribution to the project herein adopted is required."

Today, we hear more and more talk of cost sharing for water projects. We cannot understand why of all the many Federal projects cost sharing is only being discussed and recommended for Corps of Engineers water projects. This does not seem to be a fair approach, but regardless, we would request that this committee not lose sight of the Federal interest in water resources and, more specifically, in the Mississippi River and tributaries project.

We would be most grateful if you would share that principal with all your colleagues. We fully recognize the complex problems each of you face, but we are also convinced that the progress we are making today and any progress we may realize in the future is dependent on the enlightened leadership of the Congress and, more specifically, of this committee.

BUDGET REQUEST

As we have done several times in recent years, we come before you today in support of the budget, and we are fully aware of the Federal budget deficit and the necessity to slow the growth of Federal spending. For these reasons we will not ask this committee for increases in the budget, but several problems exist with the budget and with the project and we believe it is imperative that we discuss these with you.

The first major problem I wish to discuss has to do with the President's budget for the Mississippi River and tributaries project. We note with alarm that $33 million of the proposed budget amount of $302 million is to be derived from a proposed inland waterways trust fund. We also note that $18.5 million will apply to construction and $14.5 million to maintenance. These funds are to be derived from fees under proposed legislation to be deposited in and appropriated from the inland waterways trust fund.

CHANNEL STABILIZATION

Mr. Chairman, this type of arrangement will seriously impact on the planned construction and required maintenance of the channel stabilization feature of the Mississippi River and tributaries project. The channel stabilization feature is a vital element in the plan to control floods on the lower Mississippi River. Without it, we would have long since lost the substantial benefits gained through the years. Unless controlled by stabilization works, the meandering of the river would make it impossible to maintain our levee alignment.

The channel stabilization on the Mississippi River must be carried forward at maximum speed to prevent deterioration of the river channel and the resulting requirement for additional raising of main line levees. In fact, it is our hope that by increasing the stabilization work on the main channel of the Mississippi that the deterioration can be stopped.

If the channel is allowed to continue to deteriorate, some of the completed flood control works on the tributaries may become ineffective. Certainly, if the completed works are not properly maintained, they quickly begin to lose their effectiveness.

This work is a seasonal operation that can only be performed in an economical manner during the very short low water period. We will be the first to admit that an important byproduct of the bank stabilization program is a more efficient navigation channel.

We also readily recognize that the bank stabilization program is actually the multipurpose aspect of the main stem program serving, as it does, both flood control and navigation.

Based on these facts, we would urge this committee to appropriate the $33 million in order that this vital work be performed as scheduled without the hindrance of proposed legislation.

ATCHAFALAYA BASIN PROJECT

One other major problem I wish to discuss concerns the Atchafalaya basin in Louisiana. As I am sure you are aware, approximately one-half of the project flood will have to be passed through the Atchafalaya Floodway in order to assure protection of the area below the Old River Control Structure. This area contains the metropolitan areas of Baton Rouge and New Orleans as well as the majority of the petrochemical industrial capability of this Nation.

At the present time, the required volume of floodwater cannot be passed down the Atchafalaya Floodway because of several miles of levees that are below the design grade. I need not point out that in to-

tal these levee lines can measure their strength only in relationship to the weakest point in them.

We are very concerned that the $26.3 million in the President's budget does not include any funds to initiate new contracts during fiscal year 1986 for the enlargement of these deficient levees. In order not to increase the overall budget amount, we would request the assistance of this committee and the review and consideration of the Corps of Engineers to make certain that any funds that could be made available from the total be applied immediately to levee enlargements in the Atchafalaya basin. With well over 100 reports already in the Washington area awaiting action by the Congress, it is prudent at this time to apply a large portion of the almost $5.5 million in the budget for surveys and planning to this much-needed construction.

Gentlemen, allow me again to say that we have appeared before you and supported the President's budget by not requesting additional funding for construction of the flood control, Mississippi River and tributaries project. We felt this is the proper thing to do in order to assist the effort to slow down the increases in Government spending and reduce the deficits.

We do want to impress on this committee that we strongly believe that the Mississippi River and tributaries project is a vital one to the well-being of the entire Nation, and we also know that as long as sufficient funds are not forthcoming, the completion of the project and the benefits it will bring are being delayed. With that in mind, we would certainly ask that if the Congress in its wisdom does make additional funding available in fiscal year 1986, that the Mississippi River and tributaries project be given every consideration for an equitable share of such funds.

Mr. Chairman, with your permission, we will proceed with our other witnesses. We appreciate the committee's patience very much. Thank you.

Senator STENNIS. Thank you very much. I liked the tone as well as the content of your fine statement. I would like to comment on it, but we will proceed on with others.

I want to recognize my colleague from Mississippi, Senator Cochran, who is running a doubleheader this morning in his Agriculture Subcommittee.

STATEMENT OF HON. THAD COCHRAN, U.S. SENATOR FROM MISSISSIPPI

Senator COCHRAN. Thank you, Mr. Chairman.

Mr. Chairman, it is an interesting situation this morning. You and I are on both this Subcommittee and the Subcommittee on Agriculture, which is having a hearing right now, as well with the ASCS and Soil Conservation Service and other agencies that are testifying in another room in this building at this very minute. So I am going to have to go over there and chair that hearing.

I just wanted to be here, though, to welcome this panel and all of the others who will be testifying at this hearing this morning and to congratulate you for the work you are doing to help identify needs that exist in the lower Mississippi River Valley.

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I particularly want to compliment Mark Simmons for his statement and welcome Joe Mooney and our friends from Arkansas and Louisiana who are part of this panel. I know we have many others who are here from our State and from this region to present testimony this morning.

We are going to be looking very carefully at the requests that are being made of the committee. We know we are under some constraints by reason of the deficit problems, but we also recognize some legitimate needs and interests that must be met if we are going to come to grips with the potentially devastating floods and other problems that can be caused if we don't continue with our Mississippi River and tributaries project and some of these other projects that are of great value to not only our region but the entire country. I am glad you are here today.

I appreciate, Mr. Chairman, your yielding to me. I would like to include in the record my more formal statement about the matters that are before the committee.

Senator STENNIS. Without objection, it is so ordered.

Senator COCHRAN. I thank the chairman very much.

Senator STENNIS. Thank you very much, Senator.

[The statement follows:]

STATEMENT OF SENATOR THAD COCHRAN

Mr. Chairman, it a pleasure to participate in this annual hearing and to receive testimony from public witnesses on behalf of flood control, navigation and the general water resources development effort in the Lower Mississippi River Valley and the surrounding region.

The budget submitted by the President for these activities, is a lean one. However, I believe that the witnesses who will be testifying here today, are aware of the national deficit and the need to reduce federal spending if we ever hope to bring the budget into balance.

I hope the testimony we receive today will provide the Subcommittee with an understanding of the priorities that they would have the Subcommittee address when we reach the point of developing the FY 86 Energy and Water Appropriations Bill. I know that flooding has been, and will continue to be, a devastating reality in the Lower Mississippi River Basin in particular. Our long-standing committment to the orderly development and construction of the Mississippi River and Tributaries Project must continue if we are to make real headway in reducing the impact of high water in the region.

The President's budget request for the MR&T project is slighty more than $300 million dollars for FY 86. However, this proposal assumes enactment of legislation to provide $33 million dollars of the total request for MR&T from the proposed waterways trust fund. In fact the entire corps budget for FY 86 of approximately $2.8 billion dollars includes $424 million dollars that is to be derived from "new legislation" that has yet to be enacted by the Congress.

As we have slowed down growth in the Civil Works program in recent years we have seen a steady increase in the share of the Civil Works Budget that has been required

for Operation and Maintenance of the existing flood control and navigation projects. The FY 86 O&M request of $1.3 billion dollars is 46% of the $2.8 billion dollars requested for the entire Civil Works program. But, even more significant in my opinion is that $355 million dollars of the O&M request for FY 86 is anticipated to be collected from the yet to be enacted Inland Waterways and Rivers and Harbors Trust Funds.

I believe that the sponsors and proponents of flood control and navigation projects are willing to share in the costs of developing and maintaining. However, I am not convinced that the proponents of significant levels of cost-sharing for flood control and inland navigation projects have fully considered the question of ability to pay. Residents of the Lower Mississippi River Valley in particular have limited resources to contribute. Yet they suffer through floods and high water that originates outside the Lower Valley.

I hope the witnesses here today will share with the Subcommittee their concerns regarding the question of local cost-sharing and its impact on flood control and navigation development in the region.

STATEMENT OF HON. DALE BUMPERS, U.S. SENATOR FROM ARKANSAS

Senator STENNIS. We will proceed now, gentlemen.

Senator BUMPERS. Mr. Chairman, may I include a statement for the record, because I am a little bit like Senator Cochran. I am on the same subcommittee and I will have to leave in a minute. But I would like to introduce a statement for the record.

Senator STENNIS. You are leaving a mighty good meeting, but we know you have to go to a mighty important one, too. We are going to yield to you. I would like to hear your statement.

Senator BUMPERS. Mr. Chairman, these gentlemen here know I am on the side of the angels. They don't need to lobby me on these things.

But I do want to welcome all of the people who took the time to come up here on all of these projects, Mr. Chairman, from Mississippi, Louisiana, and Arkansas. They spend an awful lot of time back home trying to promote these flood control projects, and they are all good friends of mine. I know many of them have dedicated virtually their entire lives to these things. We owe all of them a debt of gratitude. I am very pleased to welcome them here this morning.

McCLELLAN-KERR NAVIGATION PROJECT

There is one thing I want to get in the record, Mr. Chairman, with your indulgence. The Corps of Engineers has been asked to close out all authority for the McClellan-Kerr navigation project. I have already made my position clear to the Corps and to the White House that I will vigorously oppose that. It isn't that we haven't any major project planned on that major navigation system, but I know once you close it out, there is a possibility we will need another dam on that river sometime in the future, otherwise navigation would come to a halt. I am not sure that will prove true. But to close out the authority on that project, that would make my task and Senator Pryor's and yours and the rest of us who are interested in that river, it would make our task 10 times more difficult to get the authority to do something like that. So I see no reason to close the authority out.

I just want the record to show I am going to vigorously oppose both the administration and the Corps on that.

Senator STENNIS. Thank you very much, Senator.

[The statement follows:]

STATEMENT OF SENATOR DALE BUMPERS

Mr. Chairman, I am very pleased to welcome the representatives of the River Basin Associations from Arkansas who have come to testify before the Energy and Water Development Subcommittee today. I want to take this opportunity to express my strong support in their behalf. All of these projects under discussion today are of utmost importance to Arkansas, and I want to encourage the Committee to give these requests every consideration. Some of these projects are of particular concern to me at this time.

The Red River project continues to be vitally important, and several funding requests have been made for various portions of this project. Especially critical now are funds for continued preconstruction planning for comprehensive bank stabilization for the river from Shreveport, Louisiana upstream to Index, Arkansas. The Congress has funded this preconstruction planning for seven years, and now more than ever, it is essential that this phase be completed so that the necessary corrective construction can be undertaken. The Corps has estimated that over 1,000 acres of farmland are lost each year in this area because of bank caving. We cannot afford the continued loss of this valuable natural resource, and I urge the Committee to approve the request for an appropriation of $520,000 to continue preconstruction planning of the comprehensive bank stabilization program.

Continued funding for both the Red River Emergency Bank Protection and the Red River Levees and Bank Stabilization Below Denison Dam is extremely critical so that work can be provided to prevent continued erosion and bank caving on those portions of the river where highways, bridges and other public facilities are in danger of destruction. I therefore wholeheartedly

support the requests of $15,100,000 for the Red River Emergency Bank Protection program, and $19,700,000 for the Red River Levees and Bank Stabilization Below Denison Dam program.

Mr. Chairman, I want to express again this year my continuing disappointment over the grave disservice which the federal government has committed against the people of South Arkansas. When the government acquired the 65,000 acres of privately held land for the Felsenthal National Wildlife Refuge along the Ouachita River, the citizens of South Arkansas were assured that several public access sites and recreational areas would be developed. In fact, these people were promised that if they cooperated with the Corps land acquisition effort, they would eventually enjoy one of the finest recreational attractions in the country. However, in 1982, the Corps informed the Crosett Chamber of Commerce that they had suddenly changed their policy on the development of recreational facilities and would no longer construct the Felsenthal facilities at full federal cost. Language was inserted in the report of the Supplemental Appropriations Bill in 1983 for FY84 directing the Corps to proceed with these facilities. Funds were appropriated for this work in FY84 and FY85, but to no avail. I remain adamant about seeing the federal government fulfill its commitment to the people of South Arkansas, and I urge the Committee to support the completion of these recreational facilities.

Finally, Mr. Chairman, I have been advised that the Corps of Engineers has been asked to close out future authority for any additional construction on the McClellan-Kerr Navigation Construction Project on the Arkansas River. I have expressed my vigorous opposition to such action to the Corps. This project is a key factor in the economic growth and development of Arkansas, and its continuation is essential to our economic

future. Several important studies remain to be undertaken on existing, potentially severe, problems. I therefore urge this Committee's consideration of the vital importance of the McClellan-Kerr Navigation Construction Project and ask its support for continued authorization.

I appreciate the opportunity to express my support for these projects and urge the Committee to give them favorable consideration for funding. Thank you.

Senator STENNIS. Gentlemen, we will get to the membership as fast as we can. We have other witnesses that have come many hundreds of miles.

Senator MATTINGLY. Mr. Chairman, I have no statement. However, I also am going to the Agriculture hearing.

Senator STENNIS. We are glad to have you here, Senator. We like you both. We like the way you look at these things, too. Glad to have you, Senator. We recognize you for the purpose of putting your statement in the record and making a brief comment.

Senator MATTINGLY. That is all the comments I have, Mr. Chairman. Thank you very much.

ST. FRANCIS BASIN PROJECT

STATEMENT OF BURRELL B. FAIR, CHIEF ENGINEER, ST. FRANCIS LEVEE DISTRICT, ARK.

Senator STENNIS. All right, Mr. Simmons, do you have your next witness ready?

Mr. FAIR. Mr. Chairman, my name is Burrell B. Fair. I live in West Memphis, Ark., and I am chief engineer of the St. Francis Levee District of Arkansas. I am making this statement in support of the appropriation for the St. Francis basin project, a feature of the Mississippi River and tributaries project. I represent drainage and flood control interests in the entire St. Francis basin, those in Missouri as well as the ones in my home State. Our common goal is the completion of the authorized work in the St. Francis basin.

We are requesting the appropriation of $7.2 million for the St. Francis basin project for fiscal year 1986. This is the amount included in the budget and will provide for continuation of important items such as the State Line Outlet Channel and Blackfish Bayou, bridge construction, and so forth.

We request the help of the committee in obtaining a slight modification in the work program provided for by the budget. In the Oak Donnick Floodway in Poinsett County, Ark., there is a serious bottleneck where the Burlington Northern Railroad crosses the floodway. The only opening in the railroad fill is not big enough to pass the flow

in the floodway at that point without scouring and endangering the stability of the bridge. Reconstruction of the bridge is needed to maintain the capacity of the floodway.

I believe the Corps of Engineers would be capable of proceeding with this work in fiscal year 1986. We request that this item be inserted into the program for the coming year. Land acquisition expenditures which are included in the budget could be deferred, leaving the total budgeted amount of $7.2 million.

We also support the appropriation of the budgeted amounts for the other items in the Mississippi River and tributaries project. Our position on the other items has been expressed by other witnesses. Our needs have always been given fair consideration by this committee and we appreciate the work you do to advance the development of water resource projects.

We appreciate very much the time that all of the members have taken to come here, but it is a special honor and privilege to appear before you again, Senator Stennis, at this hearing. Thank you.

[The statement follows:]

STATEMENT OF BURRELL B. FAIR, CHIEF ENGINEER, ST. FRANCIS LEVEE DISTRICT, ARKANSAS

Mr. Chairman and members of the committee, my name is Burrell B. Fair, I live in West Memphis, Ark., and I am chief engineer of the St. Francis Levee District of Arkansas. I am making this statement in support of the appropriation for the St. Francis basin project, a tributary project under the Mississippi River and tributaries heading. I represent drainage and flood control interests in the entire St. Francis basin, those in Missouri as well as the ones in my home State. Our common goal is the completion of the authorized work in the St. Francis basin.

The St. Francis basin project provides essential flood control and drainage improvements in an 8,400 square mile area. The only outlet for the drainage from the Missouri part of the basin is through Arkansas and the complex system of levees and channels is of great economic importance to both States. A number of individuals from both States are present at this hearing to show their support for the project.

We are requesting the appropriation of $7.2 million for the St. Francis basin project for fiscal year 1986. This is the amount included in the budget and will provide for continuation of important items such as the State Line Outlet Channel and Blackfish Bayou, item 2, which will be initiated later this year with fiscal year 1985 funds. Other items of bridge construction and channel work will be advanced. The bridge construction items are necessary in preparation for future channel construction items. In the Little River drainage system, no additional items will be awarded this year but funds are provided for engineering and design in order that work can progress in future years.

We request the help of the committee in obtaining a slight modification in the work program provided for by the budget. In the Oak Donnick Floodway in Poinsett County, Ark., there is a serious bottleneck where the Burlington Northern Railroad crosses the floodway. The only opening in the railroad fill is not big enough to pass the flow in the floodway at that point without scouring and endangering the stability of the bridge. Reconstruction of the bridge is needed to maintain the capacity of the floodway. I believe the Corps of Engineers would be capable of proceeding with this work in fiscal year 1986. We request that this item be inserted into the program for the coming year. Land acquisition expenditures which are included for fiscal year 1986 could be deferred, leaving the total budgeted amount at $7.2 million.

We also support the appropriation of the budgeted amounts for the other items in the Mississippi River and tributaries project, a total of $302 million. Our position on the other items has been expressed by other witnesses. Our needs have always been given fair consideration by this committee and we appreciate the work you do to advance the development of water resource projects.

STATEMENT OF JOSEPH MOONEY, CHIEF ENGINEER, YAZOO-MISSISSIPPI DELTA LEVEE BOARD

Senator STENNIS. All right. Thank you very much for your statement indeed. We will just proceed along now. You may be subject to questions later.

I believe Mr. Mooney comes next.

Mr. MOONEY. My name is Joseph Mooney. I am chief engineer for the board of Levee Commissioners for the Yazoo-Mississippi Delta. I am from Clarksdale, Miss.

I am also addressing comments that appear in the written statement of Mr. Newman Bolls from Greenville, Miss.

We speak on behalf of the citizens of the Yazoo basin, and we want to begin by stating that we support the budget for the reasons that we do feel that the deficit is a great national problem and we want to do our part in helping to deal with it, with confidence that as soon as that deficit problem is coming under control, that once again you and your committee will do everything you can to help us with the ongoing aspects of our projects.

As Senator Bumpers mentioned just a moment ago, we realize that we are preaching to believers here. We just can't express enough appreciation for what this committee has done and how knowledgeable you are about the projects that are of such critical importance to us.

But we certainly appreciate your making this special effort to let us participate in the democratic process by coming and speaking to you. This means a great deal to us. I want to express the appreciation of our entire organization for those special efforts.

Our area is composed of approximately 13,000 square miles, about 6,600 square miles of which are in the Mississippi River Delta. Everything about that delta is affected by the drainage that comes down the Mississippi River from the Appalachians on the east and the Rockies on the west.

Our people, as you pointed out, Senator Stennis, have spent tremendous sums of money trying to cope with these problems until the 1928 Flood Control Act, at which time the Corps of Engineers designed a comprehensive plan for the whole valley, which is the key to us being able to realize the true potential of our valley and the productive goods that are there to contribute so much to our national economy.

We realize, as you know, that those are investments that return great benefits. But the general public doesn't realize that. So we feel lit is very important to have this opportunity to state those facts clearly.

In the Yazoo basin, through fiscal year 1984, the Corps of Engineers has expended $400 million in Federal funds on those projects and they estimate a return of $15 million in benefits, which is roughly in the same ratio as the future work. With a 3-to-1 benefit ratio, that is a good investment any time you can get it.

We know you gentlemen are aware of that. We want the rest of the American public to realize it also.

We thank you very much for everything you have done for us in the past. We know as soon as our national needs are met as far as the deficit is concerned, that you will once again fund our projects on an orderly basis. Thank you, Senator.

Senator STENNIS. I want to make a brief passing remark of all the problems that go with this construction and matters that come up. I want to give the U.S. Army Corps of Engineers credit where credit is due. They are a fine professional group. I have found them to be straight and clean. I know they provoke you sometimes, taking your land and everything. Generally I am for the man that wants to hold his land. But this fine professional group that heads up most of this flood control has done so much in a constructive way for the Nation they deserve a tribute. I am glad to pay them that tribute and want to thank them for what they have done.

May I very briefly tell a little story here, a true story. Some 15 or so years ago the President of the United States was going to Missouri to make a speech one morning. We had a large backwater flood in the delta, and while not a general flood, it was devastating the way it was hitting. The water got in behind the small levees and we couldn't get it out.

So I persuaded the President to make a bend down there and see the flood from the plane. He looked out the window and he was very much impressed. He hadn't seen such a sight like that from a plane.

We passed along a nice house there. The water was already up to the second story. Everything was covered all around it. It bothered him greatly. He said, "My goodness, will those brave people come back when this water finally does come down?" I said, "Mr. President, those people never have left yet." [Laughter.]

I think that fairly well describes the spirit of all of you people that live in that area. You are willing to carry your part, and you have. I know that personally. It is an investment for the Nation.

I don't like to spend money when I think it is not an investment, somebody else's money. I mean I don't like to vote for it. But I am confident here, and I have been on this committee a long time, that by and large this goes for constructive purposes. It is an investment for the Nation, not just for the individual that happens to live there now.

So you have a great cause. Don't apologize for it, ever. Just work harder making this go. You stand behind us, too, about getting that legislation you referred to a while ago. It is absolutely necessary we get something in this field.

Thank you very much for the statement you made, Mr. Mooney.

[The statement follows:]

STATEMENT OF JOSEPH F. MOONEY, JR., CHIEF ENGINEER, BOARD OF LEVEE COMMISSIONERS FOR THE YAZOO-MISSISSIPPI DELTA

Mr. Chairman and members of the subcommittee, I am Joseph F. Mooney, Jr., of Clarksdale, MS. As chief engineer for the Board of Levee Commissioners for the Yazoo-Mississippi Delta, it is my privilege to present this statement on behalf of the

citizens of the Yazoo basin. I will speak to the highlights of this statement and of the one submitted by Mr. Newman Bolls, chief engineer for the Mississippi Levee Board at Greenville, MS. Both statements support the Lower Mississippi Valley Flood Control Association in the request for fiscal year 1986 appropriations to the Mississippi River and tributaries project.

Like many Americans, we are ambivalent toward our current national concern—the budget deficit. We accept the necessity of controlling the deficit and balancing the budget, yet we wish to resist the tightening of the investments which increase our national assets and national productivity. A few years ago, we faced a similar dilemma in the need to control inflation. By uniting in sacrifice, America met that problem. Once again, we will do our part in this problem by supporting the President's budget for the Yazoo basin.

While we support the President's budget for the Yazoo basin, we are painfully aware of the urgent needs that will have to be set aside for a while. The Yazoo basin is a rich and productive area made up of 6,800 square miles of rolling land on the east and 6,600 square miles of flat, fertile alluvial soils on the west. It is primarily a rural area sprinkled with small cities and towns. The economy of the region is based upon agriculture and light industry and is sustained by the strong work ethic of the people.

The Yazoo basin plan consists of:

—Mainline Mississippi River levees to prevent overflows along the west edge of the basin.

—Headwater reservoirs (Arkabutla, Sardis, Enid, and Grenada) to intercept and regulate the runoff from the hill portion of the basin.

—The tributaries item to provide for the improvement of the streams carrying runoff from the reservoirs and the delta to the Yazoo-Tallahatchie-Coldwater Rivers system.

—The Big Sunflower-Steele Bayou item to provide an adequate outlet for runoff from the western delta and the city of Greenville.

—The upper Yazoo projects to improve the channel of the Yazoo-Tallahatchie-Coldwater Rivers to provide the major outlet for the entire basin. When complete, the work is expected to lower flood flowlines about 5 feet and greatly reduce the need for levees and related structures along the main stem.

—Main stem item to provide for the levees and related structures required along the Yazoo River.

—Yazoo backwater project to protect nearly 1 million acres from flooding due to the backing out of the Yazoo and Mississippi Rivers.

For generations, the local people have invested heavily into these necessary works with limited success. The problems which result from handling the drainage from 42 percent of the continental United States are so great and complex as to overwhelm local resources. With the coordinated planning of the U.S. Army Corps of Engineers and the help of Federal funds, great progress is now being made. The work has a high benefit-to-cost ratio and the benefits already realized greatly outstrip the costs expended. The Corps of Engineers advises that through fiscal year 1984 the Yazoo basin plan has yielded $1,500 million in benefits at a cost of only $400 million. The remaining project is estimated to have a 3.2:1 benefit-to-cost ratio.

Adequate flood control and drainage are essential in so many ways and have a profound effect on the lives of our people and their abilities to contribute to our national well-being. It is easy to assess the benefits if a road is spared from washing away. It is not easy to assess the benefits if a clean farm is spared the infestation of weed seed widely spread by floodwaters. In these crucial times, the latter benefit may be the difference between "make or break" for some of our heavily burdened farmers.

We sincerely appreciate the careful consideration the Congress has always given our requests for appropriations to the Mississippi River and tributaries project. We commend you for realizing that these funds are actually investments in America and return multiplied benefits to the people. As soon as the deficit is controlled, we are confident that the Congress will again try to make appropriations more nearly match the need.

We appreciate the opportunity to appear before you, to express the thinking of our people, and to participate in this process which is the essence of democracy.

STATEMENT OF RONALD BESSON, PRESIDENT, WEST JEFFERSON LEVEE DISTRICT

Senator STENNIS. All right, now we have Mr. Besson. You are president of the West Jefferson Levee District, Marrero, La. Glad to have you here, sir. You proceed in your own good way.

Mr. BESSON. Thank you, Senator.

Mr. Chairman and members of the committee, it is indeed a pleasure to be here today.

Senator Stennis, let me echo what Mr. Mooney stated earlier. We certainly appreciate all of the effort, your personal efforts, in making this particular meeting possible. We know what happened and all. We certainly appreciate all the help you gave us.

My name is Ronald R. Besson, a member of the executive committee—I might add, a rookie member, and they are teaching me a lot. It is my pleasure to address you concerning features of the Mississippi River and tributaries project in the great State of Louisiana.

I am the immediate past president of the Association of Levee Boards of Louisiana and the spokesman for that organization for this occasion. Also, I serve as the president of the board of commissioners of the West Jefferson Levee District in Louisiana. That is the newest levee district. We have been working hard and we certainly have a fine group of people.

Gentlemen, flood control in Louisiana is vital and indispensable. Almost one-half of the potential flood area of the lower Mississippi Valley is in Louisiana alone—approximately 16,000 square miles of the total 35,000 square miles—and we have about half of the levees in the lower valley. River floodplains in Louisiana occupy only one-third of the State area, but that same area includes almost 85 percent of the State's population, 90 percent of the disposable income, most of its metropolitan cities, major highways, railroads and pipelines, about two-thirds of Louisiana's agricultural products, and practically all major industries are located in that same one-third area of our State. It is, therefore, clearly understood that Louisiana is certainly dependent on flood control.

In discussing the proposed budget for the Mississippi River and tributaries project in Louisiana, we are certainly aware of and appreciate the fact that the Federal Government recognizes the need to maintain the integrity of the Old River Complex separating the Mississippi River from the Atchafalaya River. This continues to be recognized by the U.S. Army Corps of Engineers as the No. 1 civil works project in the Nation. The $46 million that is proposed in the President's budget indicates this high priority. This will enable the Corps of Engineers to proceed with this all important project and we urge that the recommended amount be appropriated for this project in fiscal year 1986.

Downstream from and associated with the Old River Control Structures lies the Atchafalaya Basin Floodway which must carry one-half of the project design flood below the latitude of Old River. This floodway has been under construction since 1928 and is not scheduled for completion before the year 2000.

At the present time, the floodway levee system can contain only 67 percent of its portion of the project flood. Additional work is critical at this time and should be pursued with determination.

While we recommend the budgeted amount of $26.3 million, we also urgently request that funds within the budgeted project amount be shifted where possible to support additional items of work. Remember, the Atchafalaya Floodway is the key to successful passage of the Mississippi River and tributaries project flood, which is absolutely necessary to protect the downriver cities, such as Baton Rouge and New Orleans.

CHANNEL IMPROVEMENT

Another item where additional funding is needed is channel improvement. This must be advanced to prevent bank caving from threatening and resulting in levee failures or setbacks. There are outstanding needs for Mississippi River system which should be constructed this year to prevent more extensive and expensive work at a later date, and there is uncertainty and anxiety about waiting any longer.

The Lower Mississippi Valley Flood Control Association, joined by the Association of Levee Boards of Louisiana, supports appropriation of the budgeted amount of $68 million. These funds, we strongly feel, should be appropriated and not made available from the trust fund as proposed. Again, we urge that funding of the project be carefully utilized by shifting funds from other items where possible to support any additional work.

As you all know, levees are the mainline defense against flooding on the Mississippi River. For this reason and for similar reasons cited above regarding the Atchafalaya basin and channel improvements, we are emphasizing priority need for Mississippi River levees in Louisiana.

Regarding fiscal year 1986 appropriations to the Mississippi River and tributaries project, I am pleased to endorse budgeted amounts for surveys, planning, and design. However, I agree with Chairman Simmons that substantial portions of these funds can be meaningfully applied to other more critical items in the project.

We concur with the proposed budget for operation and maintenance.

Gentlemen, we have deep concerns of the intent to provide funding for the Mississippi River and tributaries flood control project from the proposed trust fund. Such sources of dollars for flood control projects should not be allowed. All indications are that the proposed trust fund has been derived from fuel tax, are not directly related to flood control, and should not ever be diverted to flood control construction. All appropriations should be made as in the past. We urge the committee not to utilize the proposed trust fund as a source of funding for flood control.

A written statement has been filed for the record from the Louisiana Department of Transportation and Development. This statement agrees with budget allowances. Please note, however, that amounts which are in excess of the budget indicate priority areas where most critical needs exist. With your permission, we would also like to file a statement in support of appropriations to navigation and hurricane protection projects not included in the Mississippi River and tributaries project.

We certainly compliment this subcommittee for its keen understanding of overall needs and timely appropriations to many complex requirements of the Mississippi River flood control project.

This is my first time testifying in front of this committee. They saved me for last so they could get me real nervous, which they have done. But I certainly appreciate the opportunity of doing this today. I hope they will let me come back sometime. Thank you.

Senator STENNIS. We hope so, too. Thank you.

Senator Sasser has been here this morning. He is a loyal member of this committee and interested in every phase of Tennessee and surrounding areas and knows a lot about them. I am going to give him a chance to put in the record what you want and also make such remarks as you want.

STATEMENT OF HON. JAMES SASSER, U.S. SENATOR FROM TENNESSEE

Senator SASSER. Thank you very much, Mr. Chairman. I want to express my appreciation to you for holding these hearings. Unfortunately, I am going to not be able to stay for all of the testimony. I think I am a pretty flexible individual, but I have never learned how to be two places at one time. This morning we have the Defense Appropriations Subcommittee meeting, of which I am a member, and we are talking up the very important problem of the strategic defense initiative—so-called Star Wars. At the same time, I have to get by the Agriculture Appropriations Committee to try to keep the Soil Conservation Service from being abolished over there. So it is going to be a busy morning.

But, Mr. Chairman, I have a profound interest in the wonderful work that is done in the Lower Mississippi flood control area and, as you know, a keen interest in the Obion-Forked Deer River basin and the west Tennessee tributaries work. This has been very vital to my State and I think vital to overall flood control and soil erosion control in all of west Tennessee and, indeed, the Southeast.

I would be derelict if I didn't pay tribute to the marvelous work that you have done over so many decades in our region of the country to see that our people are adequately safeguarded from floods, safe in both their property and their homes, and also your keen interest in seeing that we retain the soil that is so valuable to us in the Southeast.

Having said that, Mr. Chairman, I am going to have to take my leave. But I will review the record with great interest, and I am delighted to see our distinguished colleague from Louisiana, Senator Long, here today. I bid him good morning.

Senator STENNIS. Thank you very much for coming by and your contribution here.

STATEMENT OF HON. RUSSELL B. LONG, U.S. SENATOR FROM LOUISIANA

Senator STENNIS. This gentleman has rarely, if ever, since I have been around, lost a vote on the floor of the U.S. Senate, but there is one question that if it came up, he would have been overruled if he had put it to a vote. That is the question on whether or not he ought to retire. [Laughter.]

That came from both the heart and the head of every Member.

Russell, we are glad to have you here. We are interested in whatever you have to say.

Senator LONG. Thank you so much, Mr. Chairman. I appreciate this opportunity to speak to this group.

Mr. Chairman, we appreciate the wonderful work you are doing for your country and the work of the Appropriations Committee. You have some wonderful people here testifying before you today. I know you will carefully consider and recommend to the full committee your best judgment on what they present here today.

Insofar as you have the discretion, I hope you will be good to these people because they are the salt of the earth. They are the kind of people we ought to try to help do their job for the country as much as we can.

I have three committee meetings this morning. I am not going to be able to stay and hear these very fine statements. But I would like to submit a statement supporting our Louisiana projects, Mr. Chairman. I say that without any criticism, but only support for all of those who are here today testifying for projects for the Mississippi River and tributaries. Thank you very much. [Applause.]

Senator STENNIS. Thank you, Senator.

[The statement follows:]

STATEMENT OF SENATOR LONG

Mr. Chairman, it is a pleasure for me to have the opportunity to testify before your subcommittee. I wish to commend you, the subcommittee, and the full Appropriations Committee for the careful attention you have shown for the Nation in the area of water resources projects.

I also wish to welcome the Louisiana witnesses who have traveled to Washington in order to testify today. Your presence is the most compelling testimony that can be given regarding the large level of support for these projects within Louisiana.

Mr. Chairman, I know you share with me a strong commitment to seeking a solution to the Nation's deficit problem. The committee will be pleased that the witnesses scheduled to testify are also willing to share in this effort. Their proposals reflect a keen understanding of the problems we face. Spending in excess of the administration's budget request is only recommended by these witnesses in a limited number of cases where the need is greatest.

I would like to call attention to a few projects of particular concern. The first projects I will discuss are for flood control. These projects are of critical importance to Louisiana, and we have willingly paid for a large portion of the cost of these projects for years. Total local expenditures for flood control projects in Louisiana exceeds $5.3 billion in 1979 dollars.

As you know, Mr. Chairman, the Mississippi River and tributaries project provides a comprehensive flood control program for the entire Mississippi River Valley. Work is more than 90 percent complete upstream. Yet, Louisiana's Atchafalaya basin can only handle 67 percent of a major flood. At risk are the lives of over 650,000 people and billions of dollars of property. I urge the committee to approve the funds necessary to keep this critical project going.

I would also like to urge the committee to give careful consideration to flood control in the Red River Valley. The administration's request has again failed to provide funding for flood control along the Red River between Colfax and Shreveport, LA.

Flood control work in this stretch of the Red River must proceed. The citizens in this area cannot await completion of the Red River Waterway project in order to have flood protection.

In regard to the Red River Waterway, I wish to commend the Appropriations Committee for the level of support this project has received. I was pleased to have had the opportunity to attend the dedication of lock and dam No. 1 in November of last year. That dedication focused attention on the promise the waterway holds for the Red River Valley. I urge the committee to continue in its commitment to the Red River and provide funds to move ahead with construction of lock and dam No. 3.

Full utilization of the Mississippi River for navigation purposes must also be assured. This project is among the earliest of our Federal commitments to navigation and must be maintained. I would urge the committee to provide funds for maintenance dredging of the Southwest Pass and the Mississippi River-gulf outlet in accordance with the full capabilities of the Corps of Engineers.

Congress must also take the steps necessary to insure orderly development of deep-draft navigation in the United States. Our Nation cannot afford to lose its competitiveness because we are unable to provide channels deep enough to accommodate modern vessels. The lower Mississippi River is particularly appropriate for deep draft development. I urge the committee to give careful consideration to its unique attributes.

I would like to thank the committee for the opportunity to present testimony regarding a few projects of particular concern. The other witnesses scheduled to testify will be able to provide additional information regarding these and other projects of interest of us all. The committee's careful consideration of their comments, as always, will be greatly appreciated. Thank you.

CLOSING REMARKS

Senator STENNIS. All right, Mr. Simmons, do you have anybody else now on these matters?

Mr. SIMMONS. That concludes our testimony, Senator.

Senator STENNIS. You made a fine presentation. Every word of it will be carefully gone over first by our competent staff and then by the membership.

Let me pause here and say when I came here, the late Senator Russell of Georgia, who was later chairman of this committee, was a leader in this area of the appropriations workload. Without doing anything wrong with it, he had kind of a stacked deck. I was lucky enough to come along at the right time.

We have a staff member here now that is almost, in a way, a reincarnation of that gentleman from Georgia, the late Senator Russell. I think most of you know him already, Proctor Jones here, and I want to acknowledge our years of indebtedness to him for his splendid work. He will be working on this matter in time.

ADDITIONAL PREPARED STATEMENTS

Now, all of the statements you have submitted will be made part of the record.

I am told, ladies and gentlemen, that there are over 100 people standing out there in the hall waiting to get in here. I am not asking anyone to leave, but they, many of them, represent other associations that have an interest in this bill. So, if we can take a minute or two here to stir around. [Laughter.]

Come again, all of you.

[A brief recess was taken.]

[The statements follow:]

STATEMENT OF NEWMAN BOLLS, CHIEF ENGINEER, BOARD OF MISSISSIPPI LEVEE COMMISSIONERS

I am Newman Bolls, Chief Engineer, Board of Mississippi Levee Commissioners, Greenville, Mississippi, and I have the privilege of presenting this statement on behalf of that Board and the citizens of this levee district comprising the counties of Bolivar, Washington, Issaquena, Sharkey, Humphreys and Warren in the lower Yazoo Basin in Mississippi.

The Lower Mississippi Valley Flood Control Association will present a general statement and support the President's Budget of $302,000,000 for FY86 for the construction, surveys and advanced engineering for the Mississippi River and Tributaries Project. The Association is not making a request for any increased appropriations for it fully realizes the extreme need to exercise fiscal responsibility and to contribute every way possible to the reduction of the federal deficit which, if not contained, will destroy this great land. After analyzing the President's Budget, we feel assured that the very vital Mississippi River and Tributaries Project, with the various side basins it includes, will contain sufficient funds for the orderly prosecution of this work. If, however, in the wisdom of Congress they deem it prudent and economically justified to provide additional funds, we will recommend later in this statement those areas where we feel any additional monies could be most wisely allocated.

Following are the allocations of funds for the Yazoo Basin in Mississippi under the President's Budget submitted for expenditures in FY86. We support and strongly recommend the proposed $20,000,000 for this critically needed work.

YAZOO BASIN, MISSISSIPPI

Project	FY86 Budget
Big Sunflower	$ 3,100,000
Upper Yazoo Projects	9,200,000
Main Stem	1,300,000
Tributaries	
Except Ascalmore-Tippo-Opossum	3,700,000
Yazoo Backwater-Include Muddy Bayou	700,000
Yazoo Backwater Pump	2,000,000
Total Yazoo Basin (Construction)	$ 20,000,000

The Yazoo Basin in Mississippi is a unique area and is recognized as being one of the most productive agricultural areas in the world. However, it is highly diversified and does not depend upon agriculture alone but has great industrial development in this area. This region is absolutely dependent upon adequate flood control and interior drainage for its very survival. The project as designed is very complex and each item listed above must be considered a part of the whole in order for the project to function properly. Each expenditure made is a capital investment that year after year exceeds the original cost/benefit ratio and the return to not

only this nation but to the worldwide economy. This area must play an increasing role in providing food, fiber and manufactured goods for this nation and for the world. Some of the tragic conditions of starvation in Africa could be alleviated by the great productive capacity of this area and the ingenuity of the operators of this great fertile land. This worldwide role is becoming more manifest year after year and in order to fulfill this destiny, this basin must have adequate flood control protection.

The Main Line levees along the lower Mississippi River continue to be the most important feature of the Mississippi River and Tributaries Project and our first line of defense. It is, therefore, imperative that sufficient funds be provided on an annual and continuing basis to assure that the programs for strengthening these irreplaceable flood control structures progress without interruption.

The Yazoo Backwater area in the lower end of the Yazoo Basin shoulders a heavy responsibility for the rest of the project and the Lower Mississippi River Basin. During times of high river stages, this area must store the accumulated discharge from the improved upstream water sheds of the Big Sunflower River and Steele Bayou Basins until this water can be safely discharged into the Mississippi River by gravity flow. In 1941 when the Backwater Project was first authorized by the Congress of the United States (forty-four years ago), a pumping plant was authorized to be constructed to evacuate this stored water. Repeated tragedies in this area caused by this unnatural ponding of water has proven conclusively that the construction of the pumping plant is not only feasible but is justified and most urgently needed. The Corps of Engineers have progressed rapidly on the design of the pumping plant and on March 26, 1985 we had the privilege of viewing the model of the pumping plant that is proposed, so we feel both assured and very certain that if the construction funds are made available, work could be initiated by the end of FY85 or early FY86 for the construction of this critically needed pumping plant. Even though the conditions have not become as acute this spring as they have in previous years, at the present time upwards of 150,000 acres, which include timberland, wildlife habitat, and cropland, would not be flooded if the pumping plant had been in operation. It is imperative that funding be provided to initiate and expeditiously prosecute the completion of this pumping plant. If any additional funds are made available, this is the number one priority in our area where these funds could be most intelligently, efficiently and wisely used. We strongly petition and plead that Congress recognize the need and the plight of this area, the promises long made to relieve these deplorable conditions, and to continue and possibly increase the funding for this critically needed and highly justified Yazoo Backwater Pumping Plant.

The other major and interlocking features of the Yazoo Basin Project are the Upper Yazoo Projects, the Main Stem, Tributary Items, Big Sunflower River including Steele Bayou, Greenwood, and the four major flood control reservoirs: Sardis, Grenada, Enid and Arkabutla.

The Upper Yazoo Projects are main stream Yazoo and Tallahatchie channel improvement projects which will effectively reduce stages on the Yazoo and Tallahatchie Rivers by as much as five feet. This work will benefit several hundred thousand acres in seven counties by reducing the frequency and duration of flooding and improve drainage to lands along the main stem rivers as a result of the lower flow lines. A request of $9,200,000 is made and supported for continuation of this work.

The requested funds for the Main Stem will be used to initiate one structure and levee contract which are required by the revised flow line established for the Mississippi River levees that has resulted in inadequate levee heights on the completed Main Stem Project levees. A budget request of $1,300,000 for this work is recommended.

The Tributaries items in this project, when completed, will alleviate flooding and improve drainage for extensive farmland acreage by the enlarged channels and the construction of levees along each side of the many tributaries that enter the Yazoo and Tallahatchie Rivers from the hill Escarpment. An appropriation of $3,700,000 for the continuation of this work is strongly recommended.

The Big Sunflower River Project which at present basically involves Steele Bayou and Black Bayou in the western portion of the lower Yazoo Mississippi Delta will, when completed, alleviate flooding and provide for improved drainage on approximately 600,000 acres of fertile, delta land and is especially important inasmuch as it provides the only outlet for drainage for Greenville, Mississippi with a metropolitan population of over 50,000. We strongly support the recommendation of $3,100,000 to continue this work.

We, in the Yazoo Basin, have always prided ourselves as being patriotic, self-sacrificing citizens. This is evidenced by the vast expenditures of local taxes to support and finance the critical flood control and drainage problem so greatly affecting our area. We feel that we are again demonstrating this patriotic characteristic by not appealing for additional funds but are supporting the President's Budget. We are very aware of the urgency to contain the destructive spiral of inflation and return to a balanced budget. The failure to do so will mean the utter collapse of America and with it, the free world. We are willing to do our part. We are agreeable to well-thought-out reductions that will not jeopardize the overall economy and effort and ask only that we be treated fairly.

We are grateful for the careful consideration you have always given our requests and wish to thank and commend you on the difficult job you have always done so well in providing funds for these most beneficial projects.

STATEMENT OF THE BAFOURCHE BASIN LEVEE DISTRICT, LOUISIANA

THE LEVEE DISTRICT

The Lafourche Basin Levee District extends downstream from the city of Donaldsonville a distance of some 90 river miles, includes the west (right descending) bank of the Mississippi River, and is comprised of portions of Ascension, Lafourche, Assumption, St. Charles, St. John the Baptist and St. James Parishes. The west bank levee is continuous throughout the Levee District.

Extensive development of major industries has taken place in the Lafourche Basin Levee District. In addition to industrial growth in our Levee District, there are two nationally-ranked deep-water ports, the Baton Rouge Port and South Louisiana Port.

The District contains large diameter pipeline systems which deliver goods to nationwide distribution points. A number of major U. S. Highways traverse the Levee District, along with major railroads. The Mississippi River deep water channel for ocean going vessels and the proposed 55-foot channel are a part of the Levee District Area.

All these features and many other improvements are protected by the Mississippi River levee and related features. Only through continuous, effective flood control improvements and maintenance can this area and the lower river valley meet requirements to serve national needs for industry, employment, deep-water navigation, highway and rail transportation, major pipe lines, residential, agriculture and related activities.

RECOMMENDATIONS

Mississippi River Levees (Amount Recommended: $28,600.000)

Construction of the Mississippi River levee in the Lafourche Basin Levee District and elsewhere must be completed. The basic well

being of the nation is dependent on its future flood control success in terms of economy, agriculture, industry, transportation, jobs, recreation, environment and many vast improvements throughout the river valley.

The Lafourche Basin Levee District has reaches of levees which are below grade, sub-standard, or odd sections and otherwise do not meet project design criteria. Serious seepage problems always accompany each high water. Some distances from levee toe to top bank are critically narrow. Wavewash damages are a year round threat, but, become more acute with high river stages when the unprotected riverside slope of the levee is exposed to rapid wavewash erosion.

The Lafourche Basin Levee District Board of Commissioners, recommends $28,600,000, which agrees with the budget amount, be appropriated for FY 1986 for:

1) construction of levees for enlargement and re-shaping to meet standard section design requirements;
2) construction of slope pavement on the riverside of the levee where required, and;
3) construction of foreshore dikes and placement of rip-rap to prevent further erosion and loss of batture areas in critical reaches.

Channel Improvement (Amount Recommended $68,000,000)

Main line levees must be protected from caving banks throughout the lower river reaches where extremely narrow battures are the last line of defense against crevasses and failures. There simply is no place left for levee setbacks in the Lafourche Basin Levee District. The only proven remedy to stabilize these continually eroding banks is construction of revetment.

Funding levels of the past few years for Mississippi River Channel improvement should not be allowed to decline, and this level of spending is historically a cutback, even in terms of increased costs. It must be realized that while revetment and channel improvements are well advanced for the Mississippi River above Old River, those same needs are only about half complete in the lower portion below Old River. The volume of work to be done annually has not declined. The Lafourche Basin Levee District urges Congress to appropriate $68,000,000 for FY 1986.

CONCLUSION

The Board of Commissioners for the Lafourche Basin Levee District, compliments the Subcommittee on Energy and Water Development for the keen understanding of the real needs of the MR & T Flood Control Project and the efficient, responsive actions taken to appropriate funds for its many complex requirements. We endorse recommendations presented by the Association of Levee Boards of Louisiana, Louisiana Office of Public Works, Lower Mississippi Valley Flood Control Association, Red River Valley Association and Ouachita River Valley Association.

MEMBERS, BOARD OF COMMISSIONERS	PARISH
Aubrey Gravois, President	St. James
Henry Hymel, Vice President	St. John the Baptist
Leonard Alcorn	Assumption
Carl Bourgeois	Lafourche
Stanley Folse	St. James
Lionel Horn	St. Charles
Michael McKinney	Ascension
Bobby Simoneaux	Assumption
John J Tabor	Lafourche

STATEMENT OF LARRY D. DOWDY, THE LITTLE RIVER DRAINAGE DISTRICT, MISSOURI

MY NAME IS LARRY D. DOWDY. I LIVE IN CAPE GIRARDEAU, MISSOURI AND SERVE AS MAINTENANCE SUPERVISOR FOR THE LITTLE RIVER DRAINAGE DISTRICT OF SOUTHEAST MISSOURI. MY TESTIMONY WILL RELATE SPECIFICALLY TO F. Y. 1986 APPROPRIATIONS FOR THE ST. FRANCIS BASIN PROJECT OF THE MISSISSIPPI RIVER TRIBUTARIES PROJECT.

I AM TESTIFYING TODAY ON BEHALF OF LEVEE AND DRAINAGE DISTRICTS WITHIN THE ST. FRANCIS BASIN PROJECT IN SOUTHEAST MISSOURI AND NORTHEAST ARKANSAS. MOST OF THESE LOCALLY TAX FUNDED AND OPERATED DRAINAGE AND LEVEE DISTRICTS ARE DEPENDENT UPON OTHERS FOR THEIR OUTLETS INTO THE ST. FRANCIS AND MISSISSIPPI RIVERS.

THE F.Y. 1986 BUDGET INCLUDES $7,200,000 FOR CONSTRUCTION IN THE ST. FRANCIS BASIN PROJECT WHICH HAS A CORPS CAPABILITY OF $10,475,000. ALSO $270,000 IS IN THE F.Y. 1986 BUDGET FOR ENGINEERING AND DESIGN WHICH IS EQUAL TO THE CORPS CAPABILITY. THESE AMOUNTS ARE SUPPORTED BY OUR DISTRICT AND ASSOCIATION AND DO REFLECT A SLIGHT INCREASE ABOVE THE F. Y. 1985 APPROPRIATION. PLEASE NOTE THE CONSTRUCTION MONIES EXCEED THE PLANNING AMOUNTS BY A GOOD AMOUNT WHICH WE CONSIDER A GOOD AND WORKABLE DIFFERENCE. THIS IS SOME CHANGE FROM PAST YEARS WHICH WE HAVE ADDRESSED BEFORE. WE THANK THIS COMMITTEE FOR THEIR SUPPORT IN CORRECTING THE PAST IMBALANCES OF CONSTRUCTION VS PLANNING AND DESIGN MONIES.

WE GREATLY APPRECIATE BEING GIVEN THIS OPPORTUNITY TO APPEAR BEFORE THIS COMMITTEE AND TO MAKE YOU AWARE OF THE NEEDS OF OUR AREA. WE ARE CONFIDENT THAT OUR REQUESTS WILL RECEIVE THE SAME POSITIVE CONSIDERATIONS AFFORDED US IN THE PAST. WE HAVE A NUMBER OF INDIVIDUALS PRESENT WITH US TODAY WHO HAVE TRAVELED GREAT DISTANCES AND WHO HAVE TAKEN TIME AWAY FROM THEIR BUSY SCHEDULES TO SHOW THEIR CONTINUED SUPPORT FOR THE ST. FRANCIS BASIN PROJECT. WE ALSO SUPPORT THE OTHER REQUESTS MADE BY THE OTHER WITNESSES OF THE LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION.

STATEMENT OF THE PONTCHARTRAIN LEVEE DISTRICT, LOUISIANA

THE LEVEE DISTRICT

The Pontchartrain Levee District extends downstream from the city of Baton Rouge a distance of 115 river miles, includes the east (left descending) bank of the Mississippi River, and is comprised of portions of East Baton Rouge, Iberville, Ascension, St. James, St. John, and St. Charles Parishes. The east bank levee is continuous throughout the Levee District, including the Bonnet Carre Floodway.

Extensive development of major industries has taken place in the Pontchartrain Levee District. Along with industrial growth, our Levee District has witnessed a dramatic companion increase in residential and urban expansions. Substantial portions of prime agricultural lands have now been converted to other uses. Two nationally ranked deep-water ports are located in the Pontchartrain Levee District, the Baton Rouge Port and South Louisiana Port.

The District contains large diameter pipeline systems which deliver goods to nationwide distribution points. Interstate Highways 10 and 55 and a number of major U.S. Highways traverse the Levee District, along with major railroads. The Mississippi River deep water channel for ocean going vessels and the proposed 55-foot channel are a part of the Levee District Area.

All these features and many other improvements are protected by the Mississippi River levee and related features. Only through continuous, effective flood control improvements and maintenance can this area and the lower river valley meet requirements to serve national needs for industry, employment, deep-water navigation, highway and rail transportation, major pipe lines, residential, agriculture and related activities.

RECOMMENDATIONS

Mississippi River Levees (Amount Recommended: $28,600,000)

Construction of the Mississippi River levee in the Pontchartrain Levee District and elsewhere must be completed. The basic well being of the nation is dependent on its future flood control success in terms of economy, agriculture, industry, transportation, jobs, recreation, environment and many vast improvements throughout the river valley.

The Pontchartrain Levee District has reaches of levees which are below grade, sub-standard, or odd sections and otherwise do not meet Corps of Engineers

design criteria. Serious seepage problems always accompany each high water. Some distances from levee toe to top bank are less than thirty-five feet. Wave-wash damages are a year round threat, but, become more acute with high river stages when the unprotected riverside slope of the levee is exposed to rapid wavewash erosion.

One may ask why is it necessary to spend more money on levees. The best answer is the levee crevasse which occurred August 23, 1983, in this Levee District, when the River bank revetment failed. A seven hundred foot length of levee settled and disappeared into the subsurface failure below. Emergency efforts were undertaken immediately to construct a levee setback. A number of families, their residences, a State Highway, power lines, telephone lines, gas lines, water main pipe lines, industrial improvements, and local improvements were displaced. The State of Louisiana was most fortunate that this failure did not happen during the 1983 flood, the third highest of record. There are many other reaches and locations of levee which have failure potentials, and they can be prevented only by the Congress appropriating funds needed to make timely improvements to the levees and make them safe.

The Pontchartrain Levee District Board of Commissioners, recommends $28,600,000, which agrees with the budget amount, be appropriated for FY 1986 for:

1) construction of levees for enlargement and re-shaping to meet standard section design requirements;
2) construction of slope pavement on the riverside of the levee where required, and;
3) construction of foreshore dikes and placement of rip-rap to prevent further erosion and loss of batture areas in critical reaches.

Channel Improvement (Amount Recommended: $95,000,000)

Main line levees must be protected from caving banks throughout the lower river reaches where extremely narrow battures are the last line of defense against crevasses and failures. There simply is no place left for levee setbacks in the Pontchartrain Levee District. The only proven remedy to stabilize these continually eroding banks is construction of revetment.

Funding levels of the past few years for Mississippi River Channel Improvement should not be allowed to decline, and this level of spending is historically a cutback, even in terms of increased costs. It must be realized that while revetment and channel improvements are well advanced for the Mississippi River above Old River, those same needs are only about half complete in the lower

portion below Old River. The volume of work to be done annually has not declined. The Pontchartrain Levee District urges Congress to appropriate $[illegible],000,000 for FY 1986.

Lake Pontchartrain & Vicinity,
Hurricane Protection Project.

A seldom remembered feature of Hurricane Protection in the Pontchartrain Levee District area is that portion which extends above the New Orleans City area and around Lake Pontchartrain. That segment designated for St. Charles and St. John Parishes is in the Pontchartrain Levee District and remains a great concern to the Board of Commissioners. In the period 1968 to 1970 this Levee District purchased necessary rights-of-way for construction of the Hurricane Protection Levee along the Lakefront shoreline as designated by the Corps of Engineers. Subsequently, a number of reviews, re-studies and changes have been made for the Project while no construction has been undertaken in the Pontchartrain Levee District.

As hurricane protection is advanced in the New Orleans area, and not further around Lake Pontchartrain, then the end result is that hurricane higher stages will be forced into those unprotected, adjacent areas, namely St. Charles and St. John Parishes, resulting in higher flooding, and extremely longer periods of time. One area should not be protected at the expense of another. The entire project should be advanced in a manner to provide benefits to the total area affected.

The Board of Commissioners, Pontchartrain Levee District, recommends to Congress that adequate funding be provided for construction in the New Orleans area and St. Charles and St. John Parishes, on a coordinated basis.

CONCLUSION

The Board of Commissioners, Pontchartrain Levee District, compliments the Subcommittee on Energy and Water Development for the keen understanding of the real needs of the MR & T Flood Control Project and the efficient, responsive actions taken to appropriate funds for its many complex requirements. We endorse recommendations presented by the Association of Levee Boards of Louisiana, Louisiana Office of Public Works, Lower Mississippi Valley Flood Control Association, Red River Valley Association and Ouachita River Valley Association.

STATEMENT OF THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

MISSISSIPPI RIVER AND TRIBUTARIES PROJECT

The Louisiana Department of Transportation and Development, Office of Public Works is the agency designated to represent the State of Louisiana in the planning and orderly development of water resources. This statement is presented in behalf of the State of Louisiana and contains endorsements and recommendations for Fiscal Year 1986 appropriations for Louisiana projects in the Mississippi River and Tributaries Project.

In making the following recommendations, the State of Louisiana supports, in general, the budget recommendations of the President for Fiscal Year 1986, with some exceptions. We agree that a reduction of the projected deficits is a worthy objective, but at the same time point out that water resources projects are probably the most worthwhile projects receiving federal funding and have to withstand cost justification studies other projects are not required to undergo. Although these figures seem large, they are an infinitesimal portion of the national budget. We ask that this fact be considered when the final funding decisions are made.

MISSISSIPPI RIVER AND TRIBUTARIES
SUMMARY OF RECOMMENDED APPROPRIATIONS

LOUISIANA PROJECTS	BUDGET ALLOWANCE	LOUISIANA REQUEST
Construction		
Atchafalaya Basin	$ 26,300,000	46,000,000
Bayou Cocodrie & Tributaries	150,000	150,000
Channel Improvements	68,000,000	75,000,000
Mississippi River Levees	28,600,000	31,600,000
Old River, Louisiana	46,000,000	46,000,000
Tensas Basin, AR & LA	9,300,000	9,300,000
Boeuf & Tensas Rivers	(650,000)	(650,000)
Lake Chicot Pumping Plant	(100,000)	(100,000)
Red River Backwater Area	(1,965,000)	(1,965,000)
Tensas-Cocodrie Pumping Plant	(6,585,000)	(6,585,000)
Authorized Studies		
Atchafalaya Basin (Water & Land Resources)	311,000	311,000
Boeuf-Tensas Basin	500,000	1,100,000
Bushley Bayou Area	-0-	350,000
Miss. & La. Estuarine Areas, LA & MS	140,000	140,000
Planning		
Eastern Rapides & South Central Avoyelles Parishes, La.	130,000	130,000
Mississippi Delta Region, Salinity Control Structure, LA	845,000	845,000
Operation and Maintenance		
Atchafalaya Basin	7,615,000	7,615,000
Bayou Cocodrie & Tributaries	113,000	113,000
Bonnet Carre Spillway	342,000	342,000
Channel Improvement	46,752,000	46,752,000
Lower Red River - South Bank Levees	14,000	14,000
Mississippi River Levees	10,373,000	10,373,000
Old River Control Structure	5,360,000	5,360,000
Red River Backwater Area	733,000	733,000
Tensas Basin, Boeuf & Tensas Rivers	1,408,000	1,408,000

NOTE: The projects listed above are only those in Louisiana and directly affecting the State. We realize that there are others outside of Louisiana that are vitally important to the Project and in these areas, we endorse the recommendations of the Lower Mississippi Valley Flood control Association.

ATCHAFALAYA BASIN
(Budget: $26,300,000) (Request: $46,000,000)

This project is a Main Stem component of the flood control plan for the Mississippi River and Tributaries Project. The Mississippi River can safely carry only one-half of the project flood, or 1,500,000 cubic feet per second, below Old River; the other 1,500,000 cubic feet per second must be discharged through the Atchafalaya Basin. The levees which must confine this flow to the basin are now deficient because they have settled below original design grade due to consolidation of the underlying soils, and the design has been revised upward. This places the lives and welfare of 650,000 people and their property and improvements in 13 parishes in the immediate vicinity of the Atchafalaya Floodway in jeopardy each flood year. The tax assessment records indicate the value of potential flood losses to be approximately $8 billion, not including public improvements. Over the past half century, we have supported the Mississippi River and Tributaries Project and have agreed that construction of flood protection works should start upstream and progress downstream. As a result, the Mississippi River and Tributaries Project is now more than 90% complete in sites upstream from Louisiana while the levees in the Atchafalaya Basin can contain only 67% of the project flood. Work on this project has been underway since 1928 and isn't scheduled for completion until the year 2000. We request that Congress provide $46,000,000 for this project for Fiscal Year 1986.

CHANNEL IMPROVEMENTS
(Budget: $68,000,000) (Request: $75,000,000)

Channel improvements and stabilization provide protection of levees and the many improvements behind them, as well as preventing unsatisfactory alignment where the river's bank is unstable. This project is also a Main Stem component of the flood control improvement program for the Mississippi River and the benefits are the same as for the other main stem components. The Mississippi River and Tributaries Project above Louisiana is about 90 percent complete but to a much lesser extent within Louisiana. Because of the improvements upstream, increased flows are a major problem in Louisiana where the project is lagging. The additional funds we are requesting above the President's budget recommendation will provide for the dredging and revetment work necessary to accommodate these increased flows.

MISSISSIPPI RIVER LEVEES
(Budget: $28,600,000) (Request: $31,600,000)

Construction of mainline Mississippi River Levees in Louisiana also lags behind construction in the upper valley. The same reasons that apply to our request for additional funds for channel improvements on the Mississippi River and improvements in the Atchafalaya Basin, apply equally well to our request for additional funds for Mississippi River Levees. We are requesting that $31,600,000 be appropriated for this important project.

LOCAL CONTRIBUTIONS FOR FLOOD CONTROL IMPROVEMENTS

Historically, Louisiana has always done its part in cooperation with the Federal agencies concerned with flood control. The Louisiana State Board of Engineers, the forerunner of the Office of Public Works, was created in 1879 the same year as the Mississippi River Commission to coordinate the planning and construction of the required flood control facilities to protect the State. Since that time, local expenditures for flood control have exceeded $730,000,000. This amount adjusted to 1979 dollars represents expenditures in excess of $5.3 Billion. Nearly one-half of the potential flooded area of the Lower Mississippi River Valley lies in Louisiana. Local expenditures for flood control have increased with the growth of the valley. This record not only meets, but exceeds any National Water Policy local participation requirements ever put into practice.

The State of Louisiana, its Office of Public Works, in particular, wishes to commend the Appropriations Sub-Committees on Energy and Water Development and express our appreciation for the foresight and understanding exhibited in the past of the need for authorizing adequate levels of appropriations for water resources projects which are vital to the national interest. We solicit your further consideration of the recommendations presented herein.

NAVIGATION, HURRICANE PROTECTION, AND WATER RESOURCES PROJECTS IN LOUISIANA

The Louisiana Department of Transportation and Development, Office of Public Works is the agency designated to represent the State of Louisiana for the coordinated planning and development of water resources, including flood control, navigation, drainage, water conservation and irrigation projects; therefore, this statement is presented on behalf of the State of Louisiana. We are pleased to present the endorsements and recommendations for Fiscal Year 1986 appropriations to Louisiana projects. The projects listed herein are not contained in other separate statements by the Office of Public Works on the Red River Basin or the Mississippi River and Tributaries.

In making the following recommendations regarding construction, surveys and some selected operation and maintenance items, the State of Louisiana, in general, supports the President's budget recommendations for Fiscal Year 1986. These recommendations are made, not because the projects are unworthy of higher funding levels but because we agree that a balanced budget and reductions in projected deficits are worthy objectives and are in the best interests of the nation at this time; however, we also feel that water resources projects are probably the most worthwhile and cost-effective projects in the federal budget, having to meet stringent economic justification criteria not required of other programs. We ask that this be taken into consideration in the final decision-making process to allocate the available funds.

PROJECTS	BUDGET ALLOWANCE	LOUISIANA AND REQUEST
Construction		
Lake Pontchartrain & Vicinity Hurricane Protection	$25,000,000	
Larose to Golden Meadow	3,000,000	
Mississippi River, Baton Rouge to Gulf	8,800,000	
Mississippi River, Gulf Outlet	7,200,000	
Morgan City & Vicinity	120,000	
New Orleans to Venice	3,500,000	
Ouachita & Black Rivers	1,200,000	
Authorized Studies		
Amite River & Tributaries	$ 300,000	
Bayou Lafourche & Lafourche - Jump Waterway, LA	80,000	
Gulf Intracoastal Waterway, LA & TX Section	550,000	
Lake Pontchartrain, West Shore	250,000	
Louisiana Coastal Land Loss and Marsh Creation	150,000	
Louisiana Coastal Shore & Barrier Island Erosion	200,000	
Louisiana Coastal Water Supply	262,000	
Mermentau-Vermilion & Calcasieu Rivers and Bayou Teche	160,000	
Ouachita River Basin, AR & LA	736,000	
Pearl River Basin	1,170,000	
Mississippi River - Ship Channel, Gulf to Baton Rouge	1,255,000	

Operation and Maintenance	Estimated Allowance and Louisiana Request
Atchafalaya River, Bayou Chene, Boeuf & Black	$ 4,120,000
Barataria Bay Waterway	3,180,000
Bayou Rigolette	10,000
Bayou Pierre	38,000
Bayou Teche	618,000
Calcasieu River & Pass	10,390,000
Freshwater Bayou	729,000
Gulf Intracoastal Waterway	10,420,000
Houma Navigation Canal	4,865,000
Lake Providence Harbor	385,000
Madison Parish Port	227,000
Mermentau River	705,000
Mississippi River, Baton Rouge to Gulf	29,330,000
Mississippi River - Gulf Outlet	4,440,000
Mississippi River Outlets, Venice	1,240,000
Ouachita & Black River	4,817,000
Pearl River	257,000

We ask that the amounts shown in the request column above be provided to these projects so that routine maintenance can be continued and these projects be operated as they were authorized to do.

We wish to express our thanks to the Appropriations Sub-Committees on Energy and Water Development of the House and Senate for allowing us to present this Brief on the needs of the State. Without reservation, practically every single project in Louisiana, which has been made possible through actions of these Committees, has shown a return in benefits many times in excess of that contemplated by the authorizing legislation. The projects which you fund affect the economy of not only Louisiana but the nation as a whole. The Office of Public Works appreciates accomplishments of the past and solicits your consideration of the appropriations requested for Fiscal Year 1986.

STATEMENT OF THE LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION

INDIVIDUALS WHO ATTENDED HEARINGS BEFORE THE ENERGY AND WATER DEVELOPMENT SUBCOMMITTEE ON APPROPRIATIONS

APRIL 2, 1985

MISSOURI

Consolidated Drainage Dist. #1

Mr. Glenn Ault, Jr.
Mr. John Joe Bryant

Drainage Dist. # 688

Judge D.J. Merideth, Jr.

Little River Drainage Dist.

Mr. Larry Dowdy
Mr. Dale Cato
Mr. Harry Bock
Mr. Vic Downing

St. Francis Levee District

Mr. Billy Jack Davis
Mr. T.A. Haggard
Mr. A.P. Kersey
Ms. Catherine Kaiser

St. John's Levee & Drainage Dist.

Mr. Bill David LaValle
Mr. A.C. Riley

ILLINOIS

Associate Member

Mr. Al Luhr

KENTUCKY

Fulton County Levee Board

Mr. Brantley Amberg
Mr. George Helm

TENNESSEE

Obion-Forked Deer River Basin Authority

Mr. Richard Swaim
Mr. Neal Smith
Mr. Ronnie Riley
Mr. Bob Jarvis
Mr. Alex Leech
Mrs. Susan Rawls

West Tennessee Tributaries

Mr. M.W. Williams

ARKANSAS

Chicot County Drainage District

Mr. J.M. Buffington
Mr. Ted Thornton
Mr. Geno Mazzanti

Chicot County Rural Development

Mr. James Burchfield

Cotton Belt Levee District

Mr. John King

Drainage District #7

Mr. Dan Portis
Mr. Wayne Hinds
Mr. John Brunner, Jr.

Grassy Lake and Tyronza Drainage District #9

Mr. Steve Wilson

Helena Improvement District

Mr. James Frazier
Mr. Victor Juengel
Mr. Bart Lindsey
Mr. Ashley Higgins

L'Anguille Improvement Dist. #1

Mr. Harold Cox
Mr. Trent Felton
Mr. Mike Woods
Mr. Richard Imboden
Mr. B. Lindsley
Mr. Tom B. Smith
Mr. Danny Felton

Laconia Drainage and Levee Board

Mr. Al Haraway
Mr. Raymond Galloway
Mr. Gene Raff

St. Francis Levee District

Mr. James O. Campbell
Mr. William W. Clarke
Mr. Dan Felton, Jr.
Mr. Everett Hood
Mr. C.D. Lowrance
Mr. Thomas McDaniel

ARKANSAS CONT'D

Mr. W. Gordon Morris
Mr. Paul Owens
Mrs. Gloria Eddington
Mr. W.M. Smith, Jr.
Mr. Ruben Stubblefield
Mr. J.L. Shaver, Jr.
Mr. Burrell B. Fair
Mr. David L. Rains, Jr.
Mr. Bill Felty

White River Drainage District

Mr. David Solomon
Mr. Charles Roscopf
Mr. J.B. Lambert, Jr.

MISSISSIPPI

Mississippi Levee Board

Mr. F.H. Nance
Mr. Drue Lundy
Mr. Newman Bolls
Mr. Rives Carter
Mr. DeLoach Cope
Mr. Charles S. Tindall, III
Mr. Murry Alexander
Mr. John Darnell

Rosedale-Bolivar County Port Commission

Mr. Charles Dean
Mr. David Work
Mr. George Green

Warren County Port Commission

Mr. Jimmy Heidel
Mr. Mark Chaney
Mr. Tommy Akers
Mr. Robert Walker

Yazoo-Mississippi Delta Levee Board

Mr. Robert Coker
Mr. Dan Crumpton
Mr. Eugene Federic
Mr. D.C. Parker
Mr. Robert Sayle
Mr. Thomas Allen
Mr. Craig Brewer, III
Mr. Jerry Caffey
Mr. T.M. Simmons
Mr. Henry Waterer, Jr.
Ms. Linda Dallas
Mr. Stanley Levingston
Mr. J.C. McClintock III
Mr. Joe F. Mooney
Mr. John Whitten, Jr.
Mr. Sam Hobart

LOUISIANA

Atchafalaya Basin Levee District

Mr. L.J. Gre-zaffi
Mr. Bobby Wilkinson
Mr. Wallace Hargrave
Mr. Andrew Blanchard
Mr. Wilbur Huey
Mr. Clyde Caillouet
Mr. Emanuel Crump
Mr. J.G. Duplantis
Mr. Andrew Gay
Ms. Charlene Scorsone
Ms. Kathy DeBenedetto
Mr. Fred Smith
Mr. Joseph Thibaut

Bossier Levee District

Mr. Dewey Burchett
Mr. A.S. Burt, Jr.
Mr. Tommy Taylor
Mr. Alfred Degueurce
Mr. Bruce Easterly
Mr. Roy Pilkinton
Mr. Dan Roemer
Mr. Mike Larkin
Ms. Daliah Magee
Mr. Coy Cooper

Caddo Levee District

General R.M. Hoban
Mr. Sam Barnwell
Mr. Murrell Stansell
Mr. Chris Newsome
Mr. Dan Logan, Jr.
Mr. Jim Adger
Ms. Susan Anderson

Jefferson Levee District

Mr. Bill Middleton
Mr. Robert Ferrara

Lafourche Basin Levee District

Mr. Aubrey Gravois
Mr. Randy Troscleir

Louisiana Department of Transportation and Development

Mr. Arthur Theis
Mr. Curtis Patterson
Mr. Coan Bueche
Mr. Jim Bagley
Mr. H. David Smith
Mr. Paul Colquette

Natchitoches-Cane River Levee and Drainage District

Mr. Harry Friedman, Jr.
Mr. H.C. Gahagan, Jr.

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LOUISIANA CONT'D

New Orleans Port Commission

Colonel Herb Haar
Mr. Channing Hayden
Mc. Jacques Micheil

Orleans Levee Board

Mr. Emile Schneider
Mr. John Ross

Plaquemines Parish Commission

Mrs. Germaine B. Curley
Mr. Billy D. Johnston
Mr. Sullivan J. Vullo
Mr. Luke A. Petrovich

Pontchartrain Levee Board

Mr. E.J. Veron
Mr. Jesse Bartley
Mr. Larry Moch
Mr. Donald Cicet
Mr. Gerry Dyson
Mr. David LaBorde
Mr. Joseph Gautreau
Mr. Ronald St. Pierre
Mr. Chester Diez
Mr. Steven Cupit
Mr. Kennell Goudia

Red River, Atchafalaya & Bayou Boeuf Levee District

Mr. Beuford Smith
Mr. Gordon Baker
Mr. Joseph Artall
Mr. Robert Smith

Red River Waterway Commission

Mr. Don Sonnier

Tensas Basin Levee District

Mr. Robert Irby
Mr. Reggy McDaniel
Mr. Clarence Richard, Jr.
Mr. H.A. Boughton
Mr. John Stringer
Mr. J.M. Trisler

West Jefferson Levee District

Mr. Ron Besson
Mr. Francis Boffone
Mr. Theron Bergeron
Mr. Frank Muscarello
Mr. Thomas Alario
Mr. Eugene Fitchue
Mr. William Scheffler
Mr. Phillip Loyacano
Mr. Ernest Tassin

Our agency has proudly served as the official sponsor in Mississippi for the U.S. Corps of Engineers in the construction of the Tennessee-Tombigbee Waterway. We consider this waterway a masterpiece of technology that was performed by the Corps. We wish to salute the Corps for a job well done.

In order to utilize the waterway to its full potential, the waterway and its tributaries, the waterway must be fully developed for recreational and industrial purposes. Our agency is very concerned about our soil erosion, flood, and drainage problems within the Tombigbee River basin in Mississippi. A comprehensive water management plan must be implemented in order to address and resolve these problems.

We have sponsored a number of studies to determine our region's ground water supply. Our ground water aquifers are decreasing at an alarming rate due to population and industrial growth. Our considerable amount of rainfall in this area can be converted into an asset through a retention program. This surface water could then be used for consumption by our residents and our industries. We must maintain a plan for the conservation of our ground waters.

We further feel these necessary projects can only be accomplished with the continuing assistance of the U.S. Army Corps of Engineers and the U.S. Soil Conservation Service through the U.S. Department of Agriculture, along with numerous State and Federal agencies.

We recommend that funding for the full capabilities of these agencies be approved in order that we may immediately begin addressing these needs and continuing the required work for the waterway. Your support, along with your foresight, has played a vital role toward not only the future of our area, but for mid-America. This we are grateful for.

I also want to express my appreciation to you, Senator Stennis, for allowing us to come up for this meeting and voicing our concerns this morning. Thank you, sir.

Senator STENNIS. We thank you very much for your entire statement. We know you do speak for the people in the area. We know you are constructive by nature. We all owe you a debt of gratitude.

I personally think we are just beginning down there. Things are going to be happening—not in a hurry, not real quick, but solid.

You have some associates with you here. Do you want to introduce them? I can call their names out.

Mr. WEIR. Yes, sir. We have Mr. Robert Calvert, president of the board of directors, is with us.

Senator STENNIS. Stand up, Mr. Calvert. You gentlemen remain standing now. Let's get them all up. James Chatham, Charles Gower, Charles Caviness, Jimmie Mills. Thank you very much for being here.

Now, I can warn all of you, if you want a thing to die down now and get less and less money and finally get down, just withdraw the local support. That is a certain way. You fail to make it year after year a sustained program.

These programs are not just for tomorrow. They are not quickies. But they are tied in with nature. It takes time. It takes time to build them up.

I can assure you, these are my home counties here that we are talking about. I used to be a judge there. I used to be district attorney. I used to be in college in that area. I love the area.

You are going to get every consideration here, I can guarantee you. Does anyone else want to say a word for the cause?

All right, thank you.

Mr. WEIR. Thank you, Senator.

Senator STENNIS. Thank you for coming and being here.

[The statement follows:]

STATEMENT OF ROBERT S. WEIR, EXECUTIVE DIRECTOR, TOMBIGBEE RIVER VALLEY WATER MANAGEMENT DISTRICT

The Tombigbee River Valley Water Management District was created for the purpose of developing and conserving the human and natural resources of our region of Mississippi. We represent 12 member counties located in northeast Mississippi consisting of approximately 350,000 people; however, our projects may benefit a larger area and a considerably larger population.

Our agency has proudly served as the official sponsor in Mississippi for the U.S. Corps of Engineers in the construction of the Tennessee-Tombigbee Waterway. We consider this waterway a masterpiece of technology that was performed by the Corps. We wish to salute the Corps for a job well done.

That sponsorship has involved over $150 million in relocated bridges, closed roads, relocated routes, and public facilities. The Tennessee-Tombigbee Waterway is now a reality because of the Corps' capabilities authorized by Congress.

The change we are observing in Mississippi is a positive movement toward the development opportunity that the Tennessee-Tombigbee Waterway makes possible. Locally, private investors are studying and reviewing investment opportunities that are evolving. These entrepreneurs are actively engaged in developing new business opportunities such as water-related enterprises; manufacturing facilities for houseboats, management companies for ports, grain elevators, private ports for fertilizers, wood products, stone, evaluating the potential for export trading companies for timber, and other commodities. There are a number of locations along the waterway that are presently developing ports for future business. Our State and agency is also involved in developing ports for this same purpose. Area businessmen are also becoming involved in recreational business opportunities with marinas, second or recreational homes, development of adjacent real estate to areas along the water in Mississippi.

The other area of development that will have a long-range impact is in planning and coordination of major industrial sites. A recent study has been completed that identifies the major sites that have been evaluated from a site selection view of availability to highway, rail, air, acreage in blocks, elevation of site above normal pool, utilities, and other factors. The study now moves to the point of acquiring acquisition costs and development costs. This will enable the State to review the best method of holding these sites for future development.

Many existing Mississippi firms are becoming aware of the water-borne freight rates and with this information are exploring the potential markets and opportunities in export in mid-America.

Northeast Mississippi's greatest export potential is in the agricultural production area. The leading commodities are forest products such as chips, logs, timber, and finished wood products; grain products, soybeans, and wheat.

We believe that if we can overcome problems of marketing of commodities, developing value-added industry, and generation of capital, Mississippi can receive benefits from the Tennessee-Tombigbee Waterway that can have great growth potentials. Although there are areas of concern, they are not impossible to acquire and develop. It is this area of concern that will allow local free enterprise to exercise its leadership. The Tennessee-Tombigbee Waterway will provide a laboratory of opportunities and experiences for the private investor.

In order that the waterway can meet its full potential, a comprehensive water resource plan must be implemented to give relief to flood and drainage problems and

soil erosion to agriculture and timberlands in the area. These problems must be addressed through desnagging and channelization of its tributaries and watershed projects developed to curb problems created by rivers and creeks in the area that deprive our farmers of a considerable amount of farmland that could be utilized and benefit people throughout our Nation and world.

As we prepare for the future, we feel that such a comprehensive water management plan will not only be a relief to our farmers and landowners, but we can also utilize the surface water as a solution for our water source for our residents and industry. The results of several studies addressing the supply of our ground water indicate a crucial concern for potential industries in their consideration of locating or expanding in this area along with a similar concern by our residents of what the future may hold regarding this necessary commodity.

Our considerable amount of rainfall in this area can be converted into an asset through a retention program. Our ground water aquifers are decreasing at an alarming rate due to population and industrial growth. It is important that we continue to devote our efforts toward the conservation of our lands and natural resources.

We further feel that these necessary projects can only be accomplished with the continuing assistance of the Army Corps of Engineers and the Soil Conservation Service through the U.S. Department of Agriculture, along with numerous State and Federal agencies. We recommend that funding for the full capabilities of these agencies be approved in order that we may immediately begin addressing these needs.

Such request is made in reference to the following authority: The Committee on Public Works and Transportation of the U.S. House of Representatives adopted a resolution on September 19, 1984, that authorized and directed the Secretary of Agriculture to make joint investigations and surveys of the Tombigbee River basin, Mississippi and Alabama, and Tuscumbia River basin, Mississippi. The investigations and surveys results, in the interest of flood prevention and control, soil erosion and siltation control, water quality control, water supply, recreation, fish and wildlife, environmental quality, watershed protection and allied purposes, are to be in a report that will be prepared and submitted to the committee in compliance with the provisions of Public Law 87–639.

Tombigbee River Valley Water Management District remains dedicated in the promotion of the Tennessee-Tombigbee Waterway to its greatest potential. Your support along with your foresight has played a vital role toward not only the future of our area, but for mid-America. This we are grateful for.

WITNESS LIST IN SUPPORT OF THE STATEMENT SUBMITTED BY TOMBIGBEE RIVER VALLEY WATER MANAGEMENT DISTRICT

Robert L. Calvert, president; Robert S. Weir, executive director; James Chatham, vice president; T. Charles Gower, secretary; Charles R. Caviness, director; and Jimmie Mills, engineer.

ADDITIONAL PREPARED STATEMENTS FOR THE RECORD

Senator STENNIS. Now, the subcommittee has received statements from the Ouachita River Valley Association and the Upper Little Arkansas River Watershed covering items of interest to them. Those statements will go into the record at this point.

[The statements follow:]

Statement of the Upper Little Arkansas River Watershed

Upper Little Arkansas River Watershed is comprised of an area of about 201,773 acres in Rice, Reno, McPherson and Ellsworth Counties in Central Kansas. The town of Little River is located near the center of the watershed. Other towns in the watershed are Geneseo, Medora, Buhler and Windom. The drainage areas generally begin at Geneseo and run southeasterly to the bottom of the watershed on Wolf Creek near the Reno/Harvey County line.

The watershed has been studied by the Corps of Engineers, Tulsa District, and a survey report along with an environmental impact statement has been prepared and reviewed by all federal and state agencies concerned. The survey report was approved by the Office of the Chief Engineer for the Corps of Engineers in December of 1983, and was submitted to the Assistant Secretary of the Army for Civil Works. It is our understanding that the Assistant Secretary, after his review and approval, will submit the survey report to OMB for clearance and conformance with the President's Policy on Water Projects.

The system which the Corps has recommended for construction consists of 18 structure sites at a total cost of $12,200,000. A tabulation of cost breakdown based on October 1984 costs is as follows:

18 STRUCTURE SYSTEM - 25 YR. STORM DESIGN

	Total	Federal	Other
Total Cost of System	$12,200,000	$10,200,000	$ 2,000,000
Mitigation	$ 12,000	$ 12,000	---
Engineering and Const. Inspect.	$ 2,000,000	$ 1,918,662	$ 81,338
Average Annual Benefits (100 yr)	$ 1,526,000	---	---
Average Annual Cost (8-3/8% Int.)	$ 1,133,000	---	---
Average Annual O and M Cost	---	---	$ 52,400
Benefit Cost Ratio	1.30		

In addition to the above costs, the District will spend another estimated $600,000 for their share of the ten site detention system, anticipating approximately $750,000 state funds for construction administered through the State Conservation Commission. This "little system" is anticipated to be constructed over a 10 to 15 year period as district and state funds are available. Both systems are designed for a 25-year storm frequency and both contain storage for the 100-year sediment level.

There are 19,414 acres which will benefit when the project is complete. In addition to these benefits, a direct result of this project will be water conservation. It is important to emphasize that aspect of conservation resources. Further data concerning this watershed project can be obtained from Tables 1 through 6 contained in the General Plan. It should be noted that Tables 1 through 6 are based on 1980 costs and have not been adjusted to reflect the latest October, 1984 figures.

The District is requesting support of the project including planning and engineering (CP and E) by the Corps of Engineers as outlined in the survey report. It is most desirable that this planning and engineering be included in the Corps work schedule for Fiscal Year 1986 so plans can be completed for the 18 structure system at the earliest possible date. Due to the high erosion and sedimentation problem in the watershed which results in extensive damage to the Little Arkansas River basin, it is most necessary that every available step be taken to expedite the project. If continued planning and engineering can be authorized at this time, it would be easier to acquire the land rights and promote land treatment above the structure sites. The project

could be under construction hopefully within 12 months after it is authorized and funded by Congress. There would be no further delay after authorization!

The District will participate and support this project in whatever means available to them. They are levying an annual tax of 2 mils spread across the entire district to build up the reserve fund for their share of construction costs. They will also make every effort to obtain land rights from the landowners where possible through donations, especially for the permanant pool and flood detention areas.

Milestones:

* Upper Little Arkansas River Watershed Joint District No. 95 organized in 1974;

* General Plan approved by Division of Water Resources, February 23, 1983;

* General Plan adopted by Watershed District, March 28, 1983;

* Survey Report approved by Office of the Chief of Engineers, December 1983;

* Site No. 1 ready for construction as soon as funds are available.

With the authorization of continued planning and engineering for Upper Little Arkansas River Watershed, (1) acquisition of easements for watershed construction could proceed immediately, and (2) the necessary land treatment measures above the structure sites could begin.

TABLE 1

ESTIMATED INSTALLATION COST OF PROPOSED WORK
UPPER LITTLE ARKANSAS RIVER WATERSHED
Joint District No. 95
Kansas

INSTALLATION COST	ESTIMATED COST (DOLLARS) APPROPRIATE FEDERAL OR STATE AGENCY	DISTRICT	TOTAL
CONSTRUCTION			
Floodwater Retarding Structures (18)	$ 6,417,200		$ 6,417,200
Mitigation	$ 11,000		$ 11,000
Detention Dams (10) with Site A	$ 657,918	$ 411,822	$ 1,069,740
Detention Dams (10) with Site B	$ 627,552	$ 398,808	$ 1,026,360
SUBTOTAL CONSTRUCTION with Site A	$ 7,086,118	$ 411,822	$ 7,497,940
SUBTOTAL CONSTRUCTION with Site B	$ 7,055,752	$ 398,808	$ 7,454,560
ENGINEERING SERVICES	$ 950,900	$ 32,946	$ 983,846
LAND TREATMENT	---	$ 10,000	$ 10,000
RELOCATION PAYMENTS	---	---	---
ADMINISTRATION			
Construction Inspection	$ 781,800	$ 41,182	$ 822,982
Other	---	$ 3,000	$ 3,000
Relocation Assistance Advis. Services	---	---	---
SUBTOTAL ADMINISTRATION	$ 781,800	$ 44,182	$ 825,982
LAND RIGHTS	---	$ 641,720	$ 641,720
TOTAL with Site A	$ 8,818,818	$ 1,140,670	$ 9,959,488
with Site B	$ 8,788,452	$ 1,127,656	$ 9,916,108

TABLE 2A

FEDERAL CONSTRUCTION COST OF
FLOODWATER RETARDING STRUCTURES
UPPER LITTLE ARKANSAS RIVER WATERSHED
Joint District No. 95
Kansas

Floodwater Retarding Structure	Federal Construction Cost	
Site No. 2a	$ 469,800	*
Site No. 6	981,900	*
Site No. 7	385,400	
Site No. 8	241,700	*
Site No. 9c	264,200	*
Site No. 10a	349,600	
Site No. 11b	393,900	*
Site No. 12	292,000	*
Site No. 13	239,600	*
Site No. 14c	407,600	*
Site No. 17a	201,700	
Site No. 18b	194,700	*
Site No. 19b	369,900	
Site No. 20	275,400	
Site No. 21	388,000	
Site No. 23	310,200	*
Site No. 25	305,100	*
Site No. 26e	346,500	
SUBTOTAL	$ 6,417,200	*
MITIGATION	11,000	
TOTAL	$ 6,428,200	*

* Does not provide for Additional Water Storage. See Page 17.

TABLE 2B

CONSTRUCTION COST OF DETENTION DAMS
UPPER LITTLE ARKANSAS RIVER WATERSHED
Joint District No. 95
Kansas

Detention Dam	Construction Cost
Site No. 1	$ 66,600
Site No. 4b	237,600
Site No. 5b	90,360
Site No. 14e	113,400 *
Site No. 15	41,400
Site No. 16	54,000
Site No. 22a	149,400 *
Site No. 22b	108,000
Site No. A	126,180 *
or	
Site No. B	82,800 *
Site No. 24	82,800 *
Total with Site A	1,069,740 *
Total with Site B	1,026,360 *

* Does not provide for Additional Water Storage. See Page 17.

TABLE 3A - STRUCTURE DATA
FLOODWATER RETARDING STRUCTURES
UPPER LITTLE ARKANSAS RIVER WATERSHED Joint District No. 95, Kansas

Structure No.	Drainage Area (Sq.Mi.)	Hazard Class	Sediment Volume (Ac.-Ft.)	Detention Volume (Ac.-Ft.)	Total Volume (Ac.-Ft.)	Sediment Pool Area (Acres)	Detention Pool Area (Acres)	Height of Dam (Feet)	Volume of Fill (Cu.Yd.)
2a	6.4	a	419	1,131	1,550	70	175	30	83,700
6	12.0	a	515	2,119	2,634	70	290	39	148,400
7	5.0	a	158	887	1,045	25	115	33	64,000
8	4.6	a	182	818	1,000	35	160	27	16,600
9c	2.8	a	215	501	716	55	80	25	42,500
10a	6.5	a	207	1,147	1,354	40	180	29	63,800
11b	6.8	a	354	1,205	1,559	75	180	26	68,800
12	2.6	a	133	457	590	25	65	27	46,200
13	2.2	a	146	386	532	25	65	30	39,200
14c	3.8	a	234	676	910	45	110	28	75,300
17a	1.3	a	88	237	325	15	50	19	30,000
18b	1.8	a	137	315	452	25	60	26	31,700
19b	2.5	a	160	443	603	30	80	35	67,200
20	4.4	a	255	784	1,039	45	130	31	44,400
21	5.8	a	327	1,034	1,361	60	150	28	67,600
23	3.5	a	248	616	864	35	95	33	47,400
25	2.5	a	175	448	623	25	60	33	51,200
26e	4.7	a	267	832	1,099	40	120	32	60,400
TOTALS	79.2		4,220	14,036	18,256	740	2,165		1,048,400

NOTE:

Data based on USGS quadrangle surveys and is subject to change with refinement of engineering data.

TABLE 3B - STRUCTURE DATA
DETENTION DAMS
UPPER LITTLE ARKANSAS RIVER WATERSHED JOINT DISTRICT NO. 95, KANSAS

Structure No.	Drainage Area (Sq.Mi.)	Hazard Class	Sediment Volume (Ac.-Ft.)	Detention Volume (Ac.-Ft.)	Total Volume (Ac.-Ft.)	Sediment Pool Area (Acres)	Detention Pool Area (Acres)	Height of Dam (Feet)	Volume of Fill (Cu.Yds.)
1	2.2	a	195	380	575	30	60	24	37,000
4b	9.1	a	730	1,656	2,386	130	350	29	132,000
5b	3.1	a	352	561	913	80	150	22	50,200
14e	7.2	a	510	1,302	1,812	70	205	26	63,000
15	0.9	a	102	160	262	15	45	22	23,000
16	1.0	a	107	174	281	30	60	20	30,000
22a	2.3	a	201	399	600	27	60	33	83,000
22b	2.2	a	193	406	599	32	73	29	60,000
A	4.5	a	326	811	1,137	92	146	27	70,100
or									
B	2.9	a	239	530	769	75	118	20	46,000
24	2.6	a	153	479	632	23	67	31	46,000
TOTALS with A	35.1		2,869	6,328	9,197	529	1,216		594,300
TOTALS with B	33.5		2,782	6,047	8,829	512	1,188		570,200

NOTE:

Data based on USGS quadrangle surveys and is subject to change with refinement of engineering data.

TABLE 4

MONETARY BENEFITS FROM WORKS OF IMPROVEMENT
UPPER LITTLE ARKANSAS RIVER WATERSHED
Joint District No. 95
Kansas

(Dollars)1/

ITEM	AVERAGE ANNUAL BENEFITS
Crop and Pasture	1,058,150
Other Agricultural	12,479
Road and Bridge	70,893
Railroad	4,817
Urban	8,130
Floodplain Scour	7,601
Sediment Damage	3,177
Indirect	10,445
Oil Field	1,122
TOTAL	1,176,814

1/ Price Base - Adjusted Normalized

TABLE 5

SUMMARY OF PHYSICAL DATA
UPPER LITTLE ARKANSAS RIVER WATERSHED
Joint District No. 95
Kansas

	UNIT	QUANTITY	
Watershed District Area	Sq. Mi. Acres	315.27 201,773	
Years to Complete Project (Estimated)	Years	20	
Average Annual Rainfall	Inches	28	
Structural Measures			
Floodwater Retarding Structures	Number	18	
Detention Dams	Number	10	
Area Inundated by Floodwater Retarding Structures			
Sediment Pool	Acres	740	
Flood Detention Pool	Acres	2,165	
Storage Capacity of Floodwater Retarding Structures			
Sediment	Ac.-Ft.	4,220	
Flood Detention	Ac.-Ft.	14,036	
Total	Ac.-Ft.	18,256	
Area Inundated by Detention Dams		w/Site A	w/Site B
Sediment Pool	Acres	529	512
Flood Detention Pool	Acres	1,216	1,188
Storage Capacity of Detention Dams			
Sediment	Ac.-Ft.	2,869	2,782
Flood Detention	Ac.-Ft.	6,328	6,047
Total	Total	9,197	8,829

TABLE 6
AREA BENEFITED
UPPER LITTLE ARKANSAS RIVER WATERSHED
Joint District No. 95
Kansas

REACH NO.	AREA BENEFITED (Acres)
IN-1-1	3,238
-2	2,909
-3	1,644
-4	615
-5	2,028
-5a	395
-6	334
-7	1,660
-8	593
-9	944
-10	356
-11	2,458
-12	966
-12A	176
-12B	351
-13	571
-14	176
TOTAL	19,414

STATEMENT OF THE OUACHITA RIVER VALLEY ASSOCIATION

We are pleased the President's Budget furnishes sufficient funds for Construction on the Ouachita/Black Rivers Projects for FY 1986. Therefore, by written testimony on behalf of the Ouachita River Valley Association, I ask the Committee to consider the following request for Operation and Maintenance in the Ouachita Basin. Recreational facilities and structural damage on Dams at Lake Greeson and the Ouachita/Black Rivers are projects which need special funding FY 1986.

The President's Budget totals $7,232,000 for both projects. Studies show projects and Corps capabilities need is $8,260,000, a difference of $1,028,000.

By unanimous agreement, the Membership of the Ouachita River Valley Association respectfully urge the Committee to consider and accept the capabilities of the Corps in its deliberation on the Ouachita/Black River Projects and ask that this request be entered into the records of the Hearings on April 2, 1985.

STATEMENT OF DON DUGGAN, CHAIRMAN, RED RIVER VALLEY ASSOCIATION

Senator STENNIS. We will go to the next group now. We come now to the Red River Valley Association and the chairman, Don Duggan.

Have a seat, gentlemen.

Who is your first witness? Do you have a statement, Mr. Duggan?

Mr. DUGGAN. Yes, Senator. First, I want to thank you for permitting us to be here this morning. I understand had it not been for your efforts, that this group would not have been before the Senate committee today. We are grateful to you for your efforts in getting us here.

My name is Don Duggan. I am chairman of the board of the 60-year-old Red River Valley Association. Our organization represents citizens concerned with the water resources development of the Red River Basin in Arkansas, Louisiana, Oklahoma, and Texas.

TRIBUTE TO CONGRESSMAN GILLIS LONG AND ED EDINGER

During our presentation before you today, my colleagues from each of the four States will testify on specific needs within their own States. However, before we begin, I would like to pay tribute to two gentlemen who are keenly missed from our appearance this year: Congressman Gillis Long, a staunch supporter and most respected Member of the House of Representatives from Louisiana, and Mr. Ed Edinger of Hugo, Okla., an RRVA vice president who made appearances before this committee for many years and was buried less than 2 weeks ago. I am sure you are aware that Mrs. Long has been elected to serve in her husband's place.

BENEFITS OF RED RIVER BASIN PROJECTS

Mr. Chairman, let me take a few minutes more to highlight the overall benefits that continued funding for Red River basin projects will bring to millions of citizens throughout our area of interest.

Potable water for residential, agricultural, and industrial use has become a major concern throughout our area. The many aspects of the Red River development, from chloride control to bank stabilization, all combine to help make the Red River a more practical water resource for communities along the river.

As an example of the potable water problems facing our citizens, I would like to cite the problem of Shreveport, La., the largest city on the Red with a population of some 210,000 people. Unless it finds a new source of water, the city's economic growth will be severely impaired.

The Red River would appear to be a logical solution to Shreveport's water needs, but the high salt content makes it too expensive to purify for use. Instead, the city is considering building two off-channel reservoirs to hold additional waters from one lake before piping the waters to another smaller lake as the primary water source for the city. These measures will cost many millions of dollars; yet, the Red flows right through the heart of the city. The chloride problem needs action.

BANK EROSION PROBLEMS

Thousands of acres of land each year are destroyed by the Red River's uncontrolled flow and bank destruction. The result is continuing rampant erosion of valuable farmlands, the threatening of vital flood control facilities, and the endangering of high-cost investments such as bridges, pipelines, highways, railroads, and utility lines.

Congressman Sam Hall told our association in February that over 1,000 acres of prime farmland are lost between Texarkana and Shreveport annually. We will continue to lose this nonreplaceable land until the river's flow and meander is controlled.

It is urgent that Congress specifically direct and provide funds for vitally needed emergency bank protection measures today. We lose 1,000 acres of the finest soil in the world; it is not going to take long until we have really lost it all.

RED RIVER WATERWAY PROJECT, LOUISIANA

And finally, and in light of today's economic situation, I would like to briefly touch on one of the most important benefits of the Red River Waterway project—the creation of jobs. We do have a high unemployment rate. With many people out of work throughout the Red River basin, the navigation project offers an opportune and practical means of putting thousands of people to work—not just at make-work jobs, but at jobs that will have a lasting effect on the quality of life of the citizens of the Red River basin.

We have invested in this project between $600 and $700 million to date, with a total estimate of $1.6 billion when completed. We need to protect this investment by accelerating the completion so that we can begin harvesting returns from our investment.

Just a few months ago we witnessed the dedication of lock and dam No. 1. I wish you could have been there. It was a great day for us. While we were extremely pleased to see this occur, the one sad note was the length of time it took to see this happen—8 years after it was begun. I urge you not to let any more delays to this project occur and that construction on lock and dam No. 3 begin without delay.

In a recent study on economic development of the Shreveport-Bossier City area, Professor Belden Daniels of MIT cited the completed waterway as one of the keys to the future growth, expansion, and diversification available to the basin. It is an enhancement of our region and national transportation infrastructure, and we of the Red River basin are ready to proceed with the development needed to make the waterway a success.

We are the last incomplete major waterway project in the United States. We have stood by supportively as the Arkansas River navigation and the Tennessee-Tombigbee and other projects have been finished and placed in service. Please grant us the appropriations through the Corps of Engineers to break ground on lock and dam No. 3 this year and proceed on a schedule that will complete this great project as soon as reasonably possible.

In support of this great project, I would submit as a part of our written statements letters from the mayors and chambers of commerce of cities along the river and from the Louisiana Association of Police Juries. These honorable people recognize the importance of the waterway and urge your support.

Thank you again for allowing me to present these comments on behalf of the Red River Valley Association.

[The statement follows:]

STATEMENT OF THE RED RIVER VALLEY ASSOCIATION

SUMMARY OF REQUEST

The Red River Valley Association, a four-state association working to develop the water resources in the Red River Basin, has worked for 60 years to turn the Red River into a benefit, instead of a liability. Today, after many years of effort, we continue that effort in requesting continued consideration for funding to carry on authorized projects which will enhance the lives of the people of the Nation.

FUNDING REQUESTS - FISCAL YEAR 1986:

PROJECTS	BUDGET PROPOSAL	RRVA REQUEST
Construction		
Red River Emergency Bank Protection	-0-	$ 15,100,000
Red River Levees & Bank Stabilization Below Denison Dam	$ 1,000,000	$ 19,700,000
Red River Waterway, Mississippi River to Shreveport	$ 90,000,000	$ 95,000,000
Red River Basin Chloride Control Areas VI and X	-0-	COE Capability
Little River, Arkansas Revetment - Phase III	-0-	$ 1,000,000
McGee Creek Lake, Oklahoma	-0-	Bur Rec Cpblty
Red River Levees & Bank Stabilization Above Lake Texoma	-0-	COE Capability
Planning		
Red River Waterway - Shreveport, La to Index, Ark	-0-	$ 212,000
Red River Waterway - Shreveport, La to Daingerfield, Tx	-0-	$ 520,000
Red River Levees & Bank Stabilization Index, Ark to Denison Dam	-0-	$ 350,000
Parker Lake, Oklahoma	-0-	100% COE Cpblty
Aloha-Rigolette, Louisiana Project	-0-	$ 500,000
Cooper Lake, Texas	-0-	COE Capability
Lake Wichita/Holiday Creek/McGrath Creek, Tx	-0-	COE Capability
Studies		
Red River Below Denison Dam Comprehensive Study	$ 221,000	$ 221,000
Cane River Island, La Flood Control Comprehensive Study	-0-	$ 335,000
Red River Basin Beneficial Uses of Salt Water - Reconnaissance Study	-0-	COE Capability
Days Creek/Nix Creek, Arkansas Feasibility Study	-0-	$ 300,000
Hugo Lake, Kiamichi River, Oklahoma Study	-0-	COE Capability
Pine Creek Lake/Pine Creek Oklahoma Feasibility Study	-0-	COE Capability
Lukfata Project, Oklahoma	-0-	COE Capability
Rush Creek Interim Study, Oklahoma	-0-	COE Capability
Cypress Basin, Texas, investigation	-0-	COE Capability

Operations and Maintenance

Red River Waterway, Mississippi River to Shreveport	$ 1,640,000	$ 1,640,000
Bayou Bodcau Reservoir	$ 371,000	$ 371,000
Bayou Pierre	$ 38,000	$ 38,000
Bayou Rigolette	$ 10,000	$ 10,000
Caddo Lake	$ 143,000	$ 143,000
Wallace Lake	$ 124,000	$ 124,000

RED RIVER VALLEY ASSOCIATION
ATTENDING HEARINGS IN WASHINGTON
APRIL 2, 1985

Red River Valley Association

Don Duggan, Chairman of the Board, Shreveport, Louisiana
Lt. General Edgar S. Harris, USAF (Ret), President, Shreveport, Louisiana
B. A. Rothschild, Vice-President, Shreveport, Louisiana
Lynn Lowe, Vice President, Texarkana, Arkansas
William C. Chapman, Vice-President, Ardmore, Oklahoma
Homer Tanner, Vice President, Daingerfield, Texas

ARKANSAS

Red River Commission

Lynn Lowe, Chairman, Texarkana, Arkansas
Vincent Foster, Hope, Arkansas
John Stroud, Texarkana, Arkansas
Jack Williams, Texarkana, Arkansas

LOUISIANA

Bossier Levee District

Dewey Burchette, Secretary, Bossier City, Louisiana
Syd Burt, Bossier City, Louisiana
Mike Larkin, Bossier City, Louisiana
Daliah MaGee, Bossier City, Louisiana
Dan Roemer, Bossier City, Louisiana

Caddo Levee District

Lt. Gen. Richard Hoban, USAF (Ret), President, Shreveport, Louisiana
Jim Adger, Shreveport, Louisiana
Susan Anderson, Shreveport, Louisiana
Sam Barnwell, Shreveport, Louisiana
Dan Logan, Shreveport, Louisiana
Chris Newsome, Shreveport, Louisiana
Murrell Stansell, Shreveport, Louisiana

Caddo/Bossier Port Commission

John Turner, President, Shreveport, Louisiana
Frank Blackburn, Bossier City, Louisiana
Claud Grace, Bossier City, Louisiana
Sinclair Kouns, Shreveport, Louisiana
R. M. Prestridge, Bossier City, Louisiana

Rapides Parish Police Jury

Carl McCain, Alexandria, Louisiana
Cecil Raggio, Alexandria, Louisiana

Red River, Atchafalaya and Bayou Boeuf Levee District

Buford Smith, Marksville, Louisiana

Red River Valley Area Council

Henry Marsland, Executive Director, Alexandria, Louisiana
Morris Doss, Alexandria, Louisiana
Joe Green, Alexandria, Louisiana
Jerry Guillory, Alexandria, Louisiana

Red River Valley Association, Enterprise Chapter

Peter Ramsey, President, Shreveport, Louisiana
Gordon Boogearts, Shreveport, Louisiana

Red River Waterway Commissioners

Doug Attaway, Shreveport, Louisiana
Norman Budd, Alexandria, Louisiana
Coy Cooper, Bossier City, Louisiana
Richard Gibson, Coushatta, Louisiana
Ben Littlepage, Colfax, Louisiana
Don Sonnier, Bossier City, Louisiana
Chester Wells, Alexandria, Louisiana

State Department of Transportation & Development

Arthur Theis, Deputy Chief Engineer, Baton Rouge, Louisiana
Coan Bueche, Baton Rouge, Louisiana
James Bagley, Baton Rouge, Louisiana
Bruce Easterly, Bossier City, Louisiana
Curtis Patterson, Baton Rouge, Louisiana
H. David Smith, Baton Rouge, Louisiana
Robert Smith, Alexandria, Louisiana

OKLAHOMA

Red-Ark Development Authority

Harvey Bollinger, Director, McAlester, Oklahoma
Margaret Bollinger, Broken Bow, Oklahoma
Bob Mace, Hugo, Oklahoma
Gary Ainsworth, McGee Creek Rural Demonstration Project, Atoka, Oklahoma
Bill Clifford, Southern Oklahoma Development Association, Ardmore, Oklahoma

TEXAS

North Texas Municipal Water District

Robert Mansell, Red River Valley Association Board Member, Wylie, Texas

INTRODUCTION OF SUPPORTING WITNESSES

Mr. DUGGAN. Before the first witness begins, I would like to introduce some people with us here today. First of all, Lt. Gen. Edgar Harris, our president.

Will you stand, Ed.

Mr. Homer Tanner, Mr. Bill Chapman, Mr. John Stroud, and Mr. Coan Bueche.

I would like at this time to ask all of the rest of the levee boards and supporters of the project to stand, please. [Standing applause.]

Mr. Tanner from Texas will be our leadoff speaker.

STATEMENT OF HOMER TANNER, VICE PRESIDENT, RED RIVER VALLEY ASSOCIATION FROM TEXAS

Mr. TANNER. Mr. Chairman, my name is Homer Tanner. I appear before you today as a member of the executive committee of the Red River Valley Association in support of the Red River Waterway project in its entirety and wish to address specifically certain elements of the project that are important to the folks in Texas.

By vocation I am the manager of the Northeast Texas Municipal Water District, a political subdivision of the State of Texas charged with the responsibility of the orderly development of certain waters of the Cypress basin, tributary to Red River.

The 79th Congress authorized the construction of the Ferrells Bridge Dam project as a dual-purpose project—flood control and water supply. The project is in place and has performed an admirable flood control function in savings of property and possibly lives. The project supplies treated water to three municipalities and is in advanced planning for system expansion.

The project supplies the water requirements for electrical power generation on the order of 2,800,000 KW. Advance planning for plants to generate another 1,000,000 KW is currently on the drawing board. The plants provide power for a vast area of Texas, Louisiana, and Arkansas. The project is doing exactly what Congress intended.

COOPER LAKE AND CHANNEL, TEXAS

Now for my point. The Cooper Lake and channels project was authorized by the 84th Congress and I appear before you today to request funds to complete the project. The reservoir will provide 273,000 acre-feet of water conservation storage space. The reservoir will allow sufficient storage for basinwide flood protection to convert 120,000 acre-feet of flood control space in Lake Wright Patman into water supply storage for the Texarkana water demand area.

We all appreciate the consideration the committee has allowed the project in the past. Cooper Lake and channels has been subjected to lengthy delays, due in large part in recent years to litigation under the National Environmental Policy Act and subsequent alleged inadequacies in the environmental impact statement. That litigation has now been resolved. Completion of Cooper Lake is essential to meet existing and future water needs of the Sulphur River Municipal Water District,

Irving, Tex., and the North Texas Municipal Water District. The North Texas Municipal Water District membership is 11 cities in the rapidly expanding urban area of more than 530,000 residents in a 1,600 square mile area to the north and east of Dallas, and also serves 44 other entities. The district faces serious short-term water supply problems unless construction of Cooper Lake is reinitiated, since its total water supply is currently provided by one reservoir—Lake Lavon. This is considered one of the most critical water supply problems in Texas.

We urge the committee to appropriate the $3 million requested in the President's budget for fiscal year 1986 to reinitiate construction of Cooper Lake.

Red River Basin Chloride Control Project

The Red River basin chloride control project is another project plagued with delays that require resolution.

In 1966 and in 1970 the Congress authorized construction of measures to control the natural salt pollution in the basin, subject to the provision that construction on the project could not be started until approved by the Secretary of the Army.

Initiation of construction on the Wichita River prior to the required approval by the Secretary of the Army was authorized by the 1974 Water Resources Act. Construction was begun in February 1977 and is nearing completion.

Construction on the remaining seven areas and two brine lakes of the Red River chloride control project is awaiting approval by the Secretary. It is our understanding the Secretary is delaying approval pending a commitment of upfront local financing.

Congress authorized construction of the entire Red River chloride control project to control natural brine sources as a 100-percent Federal project. Subsequently, the components of the overall project were reevaluated by the Corps of Engineers.

The reevaluation reaffirmed both the economic and technical feasibility of this project. According to our information, the Secretary of the Army has not reached the necessary decisions regarding this project and has not forwarded the findings and project reaffirmation onward for ultimate congressional action.

We urge the Congress request the Secretary of the Army to forward the report and his recommendation on this project to the Office of Management and Budget in accordance with the provisions of the project's authorizing legislation.

Red River Bank Stabilization Below Denison Dam

A total of $1 million is included in the President's fiscal year 1986 budget to resume construction on levees, flood control structures, and bank stabilization below Denison Dam. This construction is vital to protect the lives and property of the citizens of the Red River Valley and we feel the budgeted amount is insufficient. We support the Red River Valley Association's recommendation for funding in the amount of $19.7 million for fiscal year 1986 for the project Red River levees and bank stabilization below Denison Dam, Tex., Ark., and La.

RED RIVER WATER PROJECT, LOUISIANA

The Rivers and Harbors Act of 1968 authorized the Red River Waterway project featuring a navigation channel from the Mississippi River to Daingerfield, Tex., and stabilization of the banks of the Red River from the Mississippi River to Shreveport, La.; Shreveport, La., to Daingerfield, Tex.; Shreveport, La., to Index, Ark.; and vicinity of Index, Ark., to Denison Dam, Tex. Construction under this authorization has been initiated in the Mississippi River to Shreveport, La., reach.

We request the resumption of preconstruction planning of the waterway segment from Shreveport, La., to Daingerfield, Tex., and urge the committee to appropriate $580,000 for this purpose in fiscal year 1986.

Other specific projects we are here to support have been documented in detail. The Corps of Engineers have provided capabilities and funding levels. This association has provided additional evidence supportive of the valley's needs. The specific requests of Texas' interest have been provided in a comprehensive overview by the Texas Department of Water Resources. Copies of all documents have been submitted to the staff for inclusion in the record and, more importantly, consideration by this committee.

In the spirit of cooperation with my colleagues and associates from Louisiana, Arkansas, and Oklahoma, I wish to convey our sincere desire that you give every favorable consideration to their individual needs and requests.

Thank you, sir.

Senator STENNIS. Thank you very much. You had a good statement.

STATEMENT OF WILLIAM C. CHAPMAN, VICE PRESIDENT, RED RIVER VALLEY ASSOCIATION FROM OKLAHOMA

Mr. DUGGAN. Mr. Bill Chapman from Oklahoma is the next speaker.

Mr. CHAPMAN. Mr. Chairman, I am William Chapman. I am a farmer and rancher as well as an attorney. I was born and raised in the Red River Valley. I live there today.

It is my privilege this morning to appear before you. Unfortunately, I have been selected to fill the position of our recently deceased vice president from Oklahoma, Mr. Ed Edinger, who has been very important to our organization and will be sorely missed by the Oklahoma contingent. He served us for about 30 years. He has appeared before you numerous years.

We are handing in, of course, written testimony that we would like you to study, but we would like to take up a couple points we think are particularly of concern to the Oklahoma contingent.

COST-SHARING POLICY

First, we would like to go on record as being in strong opposition to the administration's proposed cost-sharing policies regarding water resource development projects.

A part of the cost-sharing policy being implemented by the administration includes a requirement that non-Federal interest participate in the cost of studies done by the Bureau and the Corps. The policy requires participation by the non-Federal interest in an amount equal to 50 percent of the total cost of the studies and that these funds be provided upfront.

Not only is this being done without the approval of Congress, in some cases it is being done in strict contradiction to the directions of Congress.

Congress in the 1985 Energy and Water Development appropriations bill directed the Corps of Engineers to continue and complete the Red River basin comprehensive study at full Federal expense. However, the administration and OMB directed the Corps to solicit a contract with a non-Federal sponsor for cost sharing on this project prior to the release of the appropriated funds.

We strongly support continued funding of this study and request that you again appropriate full Corps of Engineer's capability level funds for feasibility studies on this project at 100-percent Federal funding.

The administration's policy also requires upfront financing of the construction cost of water resource projects. A particular concern to us is the fact that this cost-sharing policy would require 100-percent upfront financing of hydropower development projects.

With this in mind, I would like to draw your attention to three hydropower projects currently underway by the Corps of Engineers in Oklahoma. These three projects are Hugo Lake, Pine Creek Lake, and Lukfata Lake.

Hugo and Pine Creek are existing lakes; Lukfata is an authorized project. Preliminary studies at these three projects indicate that hydropower facilities are economically feasible.

We recommend the Corps of Engineers receive full capability to continue their studies at these three projects at 100-percent Federal cost.

Red River Basin Chloride Control Project

The second area which I would like to mention is the Red River Basin Chloride Control Program. Of course, the Red River Valley serves four States, approximately 94,000 square miles, making this a very significant water resource to not only our area but to the Nation.

However, unfortunately, this water resource is highly polluted with salt, making it largely unusable for municipal and industrial water supplies and for irrigation water purposes. There have been 10 natural salt pollution areas that have been identified in the upper basin, and it contributes daily 3,600 tons of dissolved salt. That would be the equivalent of 55 train carloads being deposited in the river each day.

The Corps of Engineers has been involved in studying solutions to control these salt sources for many years. Congress authorized construction of measures to control 8 of the 10 salt sources in the basin in the 1966 and 1970 Flood Control Act. Cost-sharing agreements were also made between non-Federal sponsors and the Federal Government in 1966 regarding the control of the pollution entering the river.

One-third of the salt pollution was determined to be from manmade sources. The non-Federal entities agreed at that time to assume full responsibility for controlling this manmade pollution. The Federal Government agreed to assume full responsibility for controlling the natural pollution. While the non-Federal interest groups have expended millions of dollars to live up to their part of the bargain, the Federal Government has reneged on their part of the agreement.

The Secretary of Army has accepted the report on the project which states that the project is technically, environmentally and economically feasible. It had a benefit-cost ratio of 1.7 to 1.

The Red River Valley Association strongly requests that the Secretary of the Army immediately forward the report on this project to Congress with a favorable recommendation for the initiation of construction on the remaining areas.

I also request that the Corps of Engineers receive 100 percent Federal funding to initiate construction on areas VI and X in fiscal year 1986 at their full capability level. Both the Senate and House omnibus water bills currently being considered include language which would remove this discretionary authority given to the Secretary of the Army. We urge Congress to adopt such language to enable the decisionmaking authority regarding the continuation of appropriations on this project to return to Congress where it rightfully belongs.

The last two projects I want to quickly mention today are multipurpose lakes. We request that you appropriate the necessary funds to the Bureau of Reclamation for them to continue the construction of the McGee Creek Lake, Okla., and that this appropriation be in accordance with the Bureau's full capability in fiscal year 1986.

The second multipurpose project is Parker Lake proposed by the Corps of Engineers. Authorization is now pending in H.R. 6 and S. 366 for this project. Authorization was approved last year in the House bill and was included in the Senate bill which was never acted upon.

PARKER LAKE, OKLA.

Your committee provided funding for the continuation of planning and engineering work on Parker Lake in fiscal year 1985. We requested that appropriations be made in fiscal year 1986 for the continuation of planning and engineering at 100-percent Federal cost for the full capability of the Corps of Engineers on this project.

Senator STENNIS. Would you excuse me a minute?

[Discussion off the record.]

Senator STENNIS. I want all of your statements to be put in the record, and I will so order it now.

Is there anything you want to say very briefly in summary or conclusion?

I'm sorry, but another matter has come up and I just have to go. If they don't find another member of the commtitee that can come over, we might have to ask you to come back over here this afternoon, after you finish in the House. Or, we can just place all of the remaining statements in the record.

Mr. CHAPMAN. That pretty well concludes my remarks, sir. I appreciate you hearing us out.

Senator STENNIS. Who else do you have to testify?

Mr. DUGGAN. We have two more to testify, one from Louisiana and one from the State of Arkansas.

Senator STENNIS. That testimony is worthwhile, I am sure.

Mr. DUGGAN. Thank you, sir.

[The statements follow:]

STATEMENT OF BILL CHAPMAN, OKLAHOMA VICE PRESIDENT, RED RIVER VALLEY ASSOCIATION

My name is Bill Chapman. I am a rancher as well as an attorney. I was raised and still make my home in the Red River Valley. Although it is a great honor and a privilege to appear before this committee today, I also do so with great sadness. As Mr. Dugans has mentioned, I have been appointed as the Oklahoma Vice-President of the River Red Valley Association to fill the void left with Mr. Ed Edinger's passing. Mr. Edinger had served as the Oklahoma Vice-President and has appeared before this committee to represent Oklahoma and the Red River Valley Association for almost 30 years. Mr. Edinger's passing leaves a large void, one that will not easily or quickly be filled.

As a part of our written testimony, there are several resolutions regarding projects of vital interest to the association in general and to Oklahoma in particular. I will not attempt to discuss all of these projects with you. I would like to spend just a few minutes emphasizing some very important areas of concern to us in Oklahoma.

First, I want to go on record as being in strong opposition to the Administration's proposed cost-sharing policies regarding water resource development projects. These policies, being implemented without approval of Congress by the Administration through the Bureau and the Corps, will result in a complete shutdown of future water projects throughout this Nation.

A part of the cost-sharing policy being implemented by the Administration includes a requirement that non-Federal interest participate in the cost of studies done by the Bureau and the Corps. The policy requires participation by the non-federal interest in an amount equal to 50 percent of the total cost of the studies and that these funds be provided upfront. Not only is this being done without the approval of Congress, in some cases it is being done in strict contradiction to the directions

of Congress. Congress, in the 1985 Energy and Water Development Appropriations Bill, directed the Corps of Engineers to continue and complete the Red River Basin Comprehensive Study at full federal expense. However, the Administration and OMB directed the Corps to solicit a contract with a non-federal sponsor for cost-sharing on this project prior to the release of the appropriated funds. We strongly support continued funding of this study and request that you again appropriate full Corps of Engineer's capability level funds for feasibility studies on this project at 100 percent federal funding.

The Administration's policy also requires upfront financing of the construction cost of water resource projects. A particular concern to us is the fact that this cost-sharing policy would require 100 percent upfront financing of hydropower developmment projects. At a time when our Nation is having serious second thoughts about nuclear power and many nuclear projects are being shelved, we can ill afford to have a second vital source of energy, hydropower, also shelved. This is what will happen if the Administration's policy is implemented.

With this in mind, I would like to draw your attention to three hydropower projects currently underway by the Corps of Engineers in Oklahoma. These three projects are Hugo Lake, Pine Creek Lake, and Lukfata Lake. Hugo and Pine Creek are existing lakes. Lukfata is an authorized project. Preliminary studies at these three projects indicate that hydropower facilities are economically feasible. I recommend the Corps of Engineers receive full capability to continue their studies at these three projects at 100 percent federal cost.

The second area which I would like to mention is the Red River Basin Chloride Control Program. The Red River which drains an area of nearly 94,000 square miles is a significant water resource not only to the four states through which it flows, but also to the entire nation. However, the significant national

water resource is heavily polluted, making it unusable for municipal and industrial water supplies and for irrigation water throughout the basin. There are 10 natural salt-pollution areas identified within the upper part of the basin which contribute approdimately 3,600 tons of dissolved salt a day into the Red River.

The Corps of Engineers have been involved in studying solutions to control these salt sources for many years. I will not go into this long history. However, I will mention several key events. Congress authorized construction of measures to control eight of the 10 salt sources in the basin in the 1966 and 1970 Flood Control Acts. Cost-sharing agreements were also made between non-federal sponsors and the Federal Government in 1966 regarding the control of the pollution entering the river. One-third of the salt pollution entering the river was determined to be from man-made sources. The non-federal entities agreed to assume full responsibility for controlling this man-made pollution. The Federal Government agreed to assume full responsibility for controlling the natural pollution. While the non-federal interest have expended millions of dollars to live up to their part of the bargain, the Federal Government has reneged on their part of the agreement.

The Secretary of Army has accepted the report on the project which states that the project is technically, environmentally, and economically feasible. The report showed the project had a BCR of 1.7 to 1. The Red River Valley Association strongly requests that the Secretary of the Army immediately forward the report on this project to Congress with a favorable recommendation for the initiation of construction on the remaining areas. I also request that the Corps of Engineers receive 100 percent federal funding to initiate construction on Areas VI and X in FY 86 at their full capability level. Both the Senate and House Omnibus Water Bills currently being considered

include language which would remove this discretionary authority given to the Secretary of Army. We urge congress to adopt such language to enable the decision making authority regarding the continuation of appropriations on this project to return to Congress where it rightfully belongs.

The last two projects I want to quickly mention today are multi-purpose lakes. We request that you appropriate the necessary funds to the Bureau of Reclamation for them to continue the construction of the McGee Creek Lake, Oklahoma. And that this appropriation be in accordance with the Bureau's full capability in FY 86. The second multipurpose project is Parker Lake proposed by the Corps of Engineers. Authorization is now pending in 99HR6 and 99S366 for this project. Authorization was approved last year in the House Bill and was included in the Senate Bill which was never acted upon. Your committee provided funding for the continuation of planning and engineering work on Parker Lake in FY 85. We requested that appropriations be made in FY 86 for the continuation of planning and engineering at 100 percent federal cost for the full capabiity of the Corps of Engineers on this project. We also request that Congress authorize the construction of Parker Lake to include a regional treatment and transmission system and upon authorization, that appropriation of funds for construction be made in a Supplemental Appropriation Bill to enable construction to begin in FY 86. Both of these multi-purpose projects are vital to providing water supplies to meet the needs of the communities and industres in the Red River area.

I refer you to the resolutions included as a part of our written testimony which deal with many other much needed projects.

Again, I want to thank you for this opportunity to appear before your committee and discuss these projects which we consider vital to the development of the water resources of our area and our nation.

STATEMENT OF JOHN F. STROUD, JR., RED RIVER COMMISSION OF ARKANSAS

1.	Red River Waterway, Shreveport, Louisiana to Index, Arkansas - for continuation of preconstruction planning; President's budget request for FY-86 - none our request	$ 520,000
2.	Red River Emergency Bank Protection (Louisiana, Oklahoma Arkansas and Texas); President's budget request for FY-86 - $1,000,000 our request	15,100,000
3.	Red River Levees and Bank Stabilization Below Denison Dam (Texas, Arkansas and Louisiana); President's budget request for FY-86 - none our request	19,700,000
4.	Reshaping levees on Red River and Arkansas - for preconstruction planning; President's budget request for FY-86 - none our request	500,000
5.	Days Creek - Nix Creek (Arkansas and Texas) - for feasibility re-study President's budget request for FY-86 - none our request	300,000
6.	Red River Bank Stabilization, Index, Arkansas to Denison Dam, Texas (Arkansas, Oklahoma and Texas) for resumption of preconstruction planning; President's budget request for FY-86 - none our request	350,000
7.	Red River Below Denison Dam, Comprehensive Basin Study (Arkansas, Louisiana, Oklahoma and Texas) for continuation of planning President's budget request for FY-86 - $350,000 Our request	350,000
8.	Red River Waterway, Mississippi River to Shreveport, Louisiana - to continue construction; President's budget request for FY-85 - $90,000,000 our request	95,000,000

GENERAL STATEMENT

On behalf of the Red River Commission of Arkansas, as its attorney, I wish to thank the members of this Committee for the opportunity to again express the concerns, needs and priorities of funding from the Congress to continue the orderly development of the Red River Valley in Southwest Arkansas.

Eighteen years ago, the bank caving in Southwest Arkansas accelerated to such an extent that the levee boards in that area banned together to form an association to present testimony to the Congress with a united voice. At that time, some of the upstream dams in Arkansas and Oklahoma had been completed which greatly alleviated the threat of floods, but which rapidly accelerate the bank caving due to the river remaining at one-half to two-thirds bank full for long periods of time. Since that time upstream dams known as Millwood, Gillham, Dierks and De Queen have been completed which have further reduced the threat of flooding, but which have accelerated the bank caving even more.

The State of Arkansas became concerned at this rapid irreparable loss of its most fertile farm land in Southwest Arkansas and twelve years ago created the Red River Commission. The Commission was vested with the authority to furnish the local cooperation necessary for the construction and study of projects and to coordinate with the Corps of Engineers and the Congress to develop the water resources of the Red River in Arkansas. Southwest Arkansas is fortunate to have an abundance of water, rich soil and timber resources, but we vitally need the assistance of Congress to continue the bank stabilization projects for the preservation of these natural resources.

RED RIVER WATERWAY PROJECT, SHREVEPORT, LOUISIANA, TO INDEX, ARKANSAS

The Congress has funded preconstruction planning for this comprehensive bank stabilization program for seven years for the reach of the river from Shreveport, Louisiana upstream to the Arkansas, Texas boundary at Index, Arkansas. Although much needed stabilization work in certain areas has been performed with funding by the Emergency Bank Protection and Red River Below Denison Dam projects, only through the completion of preconstruction planning and then construction of this comprehensive bank stabilization program can the loss of valuable farm land be brought to a conclusion. The Corps of Engineers has estimated that over 1,000 acres of farm land is lost each year in this reach of the river due to bank caving.

Tens of thousands of dollars have been contributed by the four counties bordering the Red River in Arkansas and by the towns and communities within those counties and millions of dollars have been placed in the Red River Waterway Trust Fund by the Arkansas General Assembly to meet the non-federal costs of the construction of this project. The Red River Commission is continuing full speed ahead in its efforts to have the non-federal costs in hand when the preconstruction planning is completed so that construction can begin in an orderly manner without great delay. Dependent upon the level of funding by the Congress, approximately two or three years of continued preconstruction planning will be required before the Corps of Engineers will be in a position to proceed to the construction phase.

Not only will this project end the loss of some of the nation's most valuable resources, which this country can ill-afford to waste, but substantial benefit will accrue to the navigational project downstream which is presently under construction. The farm land is now washed downstream only to form worthless sand bars and place tremendous amounts of silt in the channel, both to the detriment of navigation. We, therefore, request an appropriation of $520,000 during fiscal year 1986 to continue preconstruction planning of this comprehensive bank stabilization program.

RED RIVER EMERGENCY BANK PROTECTION (LOUISIANA, OKLAHOMA, ARKANSAS AND TEXAS) AND RED RIVER LEVEES AND BANK STABILIZATION BELOW DENISON DAM (TEXAS, ARKANSAS AND LOUISIANA)

It is imperative that these two programs continue to be funded to provide bank stabilization works in those portions of the river where the caving is most critical and where public facilities such as highways, pipelines and bridges are in danger of destruction and to provide stabilization where that protection is cheaper than continued periodic levee set backs.

Approximately four years ago, the first cut-off performed on the Red River in Arkansas was completed at a point known as Mays Lake Cut-off. The Corps of Engineers let a contract for the second cut-off earlier this year at an area known as Goose Lake Cut-off which will eliminate a double bend in the river. Funding of the Emergency Bank Protection and Red River Levees and Bank Stabilization Below Denison Dam projects will continue to allow these vital improvements to be accomplished in the areas most critical during the several years of planning still required before a comprehensive bank stabilization program can begin to be constructed. In the summer of 1982, the Red River broke through a narrow strip of land between it and Little River where a water

treatment facility is located for the treatment and transmission of pure drinking water to the city of Hope, Arkansas. Repairs are in the process of completion of that break-through, but certainly preventive bank stabilization works could have been accomplished at a fraction of the cost of those repairs. This is but one example of the necessity for continued funding of these programs to avoid substantially larger expenses which will result from delay of funding.

We urge your recommendation of the funding of the Emergency Bank Protection program for fiscal year 1986 in the amount of $15,100,000 and of the Red River Levees and Bank Stabilization Below Denison Dam program in the amount of $19,700,000 for fiscal year 1986.

RESHAPING LEVEES ON RED RIVER AND ARKANSAS

The Corps of Engineers has recently completed a study indicating that the levees along the main stem of the Red River and Arkansas should be reshaped to conform to the new flow line resulting from the study. The reshaping of the levees will allow a more gentle slope on both sides of the levee to increase their integrity and substantially reduce maintenance costs. The State of Arkansas urges that Congress appropriate the sum of $500,000.00 to initiate pre-construction planning of this project.

DAYS CREEK/NIX CREEK

Days Creek and Nix Creek and their tributaries have caused frequent inundation of residences and business properties within Texarkana, Arkansas, and Texarkana, Texas. A plan has been prepared by the Corps of Engineers for improvement of these creeks and their tributaries to substantially reduce flooding in these cities.

Funds were appropriated by the Congress to undertake the Phase I design memorandum stage of advanced engineering and design, but the Chief of the Corps of Engineers refused to spend the funds following review of a feasibility study that showed that some of the benefits were not applicable and that the cost benefit ratio was not at an acceptable level.

The Red River Valley Association believes the project would prove to be a viable project if an updated feasibility study is conducted to include numerous factors not considered by the previous study. We, therefore, request that Congress provide $300,000.00 for Fiscal Year 1986 to support the full capability of the Corps of Engineers to conduct a re-study of the feasibility of this project.

RED RIVER BANK STABILIZATION, INDEX, ARKANSAS TO DENISON DAM

Bank caving is not only a serious problem between Shreveport, Louisiana and Index, Arkansas, but it continues upstream between Index, Arkansas and Denison Dam. The Congress saw fit to initiate preconstruction planning for a comprehensive bank stabilization project in that reach of the river during fiscal year 1984, but it was not funded for continued study during fiscal year 1985. We join with our sister states of Texas and Oklahoma in urging the reinstatement of this preconstruction planning project recognizing that many years of planning are required before construction of this type project can begin. We hope that an orderly development up Red River can continue in the years ahead for the benefit of the peoples of all four states bordering the Red River. We, therefore, urge you to appropriate the sum of $350,000 to resume this preconstruction planning program during fiscal year 1986.

RED RIVER BELOW DENISON DAM, COMPREHENSIVE BASIN STUDY

We think the administration displayed sound judgment when it included initial funding for a comprehensive study of the entire Red River basin during fiscal year 1984 to include flood control, water supply development, generation of hydro-electric power, development and enhancement of recreational potentials and

improvement of the river for navigation and port-site development. The study of hydro-electric power in conjunction with navigation on the Red River will undoubtedly prove of economical benefit if timely studied. We, therefore, urge your approval of the President's budget request of $350,000 for fiscal year 1986 to continue this comprehensive study.

RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LOUISIANA

It is a pleasure for the Red River Commission of Arkansas to join with the State of Louisiana to seek continued funding of the construction and completion of Lock and Dam No.2 and initiation of site work for Lock and Dam No.3. We are well aware of the economic impact that will occur not only to Louisiana, but certainly to Southwest Arkansas when the navigable channel reaches the port of Shreveport. We, therefore, urge your approval of an appropriation of $95,000,000 for fiscal year 1986 for this project.

STATEMENT BY THE LOUISIANA DEPARTMENT OF TRANSPORTTION AND DEVELOPMENT

RED RIVER BASIN

The Louisiana Department of Transportation and Development, Office of Public Works is the agency designated to represent the State of Louisiana for the coordinated planning and development of water resources including flood control, navigation, drainage, water conservation, and irrigation projects. Therefore, this statement is presented on behalf of the State of Louisiana. We are pleased to present the following endorsements and recommendations for Fiscal Year 1986 appropriations for Louisiana projects in the Red River Basin.

RECOMMENDED APPROPRIATIONS FOR RED RIVER BASIN PROJECTS
FISCAL YEAR 1986

LOUISIANA PROJECTS	BUDGET ALLOWANCE	LOUISIANA REQUEST
Construction		
Red River Emergency Bank Protection	$ -0-	$ 8,800,000
Red River Levees & Bank Stabilization Below Denison Dam	1,000,000	8,200,000
Red River Waterway, Mississippi River to Shreveport	90,000,000	95,000,000
Planning		
Red River Waterway, Shreveport, La. to Vicinity of Index, Ark.	-0-	212,000
Red River Waterway, Shreveport, La. to Dangerfield, Texas	-0-	580,000
Studies		
Red River Below Denison Dam, Comp. Basin Study	221,000	221,000

Operation and Maintenance	Estimated Obligation	Louisiana Request
Bayou Bodcau Reservoir	$ 371,000	$ 371,000
Bayou Pierre	38,000	38,000
Bayou Rigolette	10,000	10,000
Caddo Lake	143,000	143,000
Red River Waterway, Mississippi River to Shreveport	1,640,000	1,640,000
Wallace Lake	124,000	124,000

NOTE: The projects listed above are only in Louisiana and directly affecting the State. We realize that there are others outside of Louisiana that are vitally important to the Basin and we endorse the recommendations of the Red River Valley Association.

RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT
(Budget: $90,000,000) (Request: $95,000,000)

The Red River Waterway Project was authorized in 1968 by the 90th Congress only after it was given the usual series of examinations and tests of its cost-benefit aspects which are unique to water resources projects and are not required of other types of programs. The project was found to comply with these requirements and to be amply justified even though these analyses do not allow credit for some types of benefit which are none the less real. The increased availability of water supplies for municipal and industrial use and the hydropower benefits of the project have not even been fully assessed. In spite of these omissions, the project was still found to be justified both from the economical and environmental view points.

The magnitude of local participation in this project is very large compared to similar projects in other areas. The Red River Waterway Commission of Louisiana has extended more than $13,000,000 for the purchase of over 19,000 acres of rights-of-way and other local participation requirements since the project began. Additionally, local interest, through police juries, city governments, and port authorities have expended significant amounts in preparation for the development of adequate port and harbor facilities, looking forward to the day when commercial navigation will be a fact on the Red River and relying on our agreement with the Federal Government to construct the project. Additionally, the Commission has recently taken action guaranteeing that there will be a local sponsor for the development of hydropower on the Red River.

Extensive benefits of the navigation project in the areas of flood control, bank protection, reduced sedimentation, water supply, fish and wildlife, and valley-wide developments will result from completion of the waterway. The Red River Basin is the last major river basin in the United States remaining to be developed, and Louisiana has coordinated with the states of Arkansas, Oklahoma, and Texas in developing the navigation project. The area encompassing the Red River Basin in Louisiana and adjacent states is economically depressed and suffers chronically from low employment. Major industries have not developed in the basin because of lack of navigation facilities and the uncertainty of river bank stability.

The State of Louisiana shares the goal of the President and the Congress of reducing deficits and of balancing the national budget. The additional funding we are requesting beyond the President's proposed budget will be compatible with the Administration's economic goals for reducing deficits and continuing the economic recovery.

RED RIVER, EMERGENCY BANK PROTECTION
(Budget: -0-) LA (Request: $8,800,000)

Thousands of acres of productive land are lost to the river each year and improvements must be relocated or abandoned when threatened by caving banks. Authorized under the River and Harbor Act of 1968, this emergency program treats major meanders and corrects misalignment prior to the time when normal construction funding becomes available. The funding requested will preserve the desirable alignment of Red River in addition to preventing the destruction of valuable property and improvements along the river at the following locations in Louisiana: Below Lake End

Training Works, Mile 207,0-R; Coushatta Capout, Mile 220-L; Wilson Point Realignment, Mile 262.0; Gold Point Revetment, Mile 291.0-R, Cat Island Revetment, Mile 292.0-L. If this work is not done now, far greater expenditures will be required in the future to accomplish the same ends.

RED RIVER LEVEES AND BANK STABILIZATION BELOW DENISON DAM
(Budget: $1,000,000) LA (Request: $8,200,000)

The Red River Levees and Bank Stabilization Below Denison Dam Project is the only comprehensive flood control program on the Red River containing authorization for construction of a variety of flood control measures, and for which there is no existing substitute. The facilities constructed under this authorization are the first lines of flood protection for the Red River Valley and its citizens.

Because of planned construction schedules for the Red River Waterway Project, construction under this program has been inappropriately de-emphasized. The Red River Waterway Project is not a flood control project. For flood control purposes, it is imperative that the Red River Levees and Bank Stabilization Below Denison Dam program be resumed.

We request that the sum of $8,200,000 be appropriated for this project in Fiscal Year 1986 to be used at the following locations in Louisiana: Bull Revetment, Mile 213.0-L; and Carrol Realignment, Mile 230.0.

RED RIVER WATERWAY, SHREVEPORT, LA. TO VICINITY OF INDEX, ARK.
(Budget: $-0-) (Request: $212,000)

The Red River Waterway, Shreveport to Index reach is an important part of the authorized project. We urge that the $212,000 be appropriated to continue planning in this area.

RED RIVER WATERWAY, SHREVEPORT, LA. TO DANGERFIELD, TEXAS
(Budget: $-0-) (Request: $580,000)

Similarly, the Red River Waterway, Shreveport to Dangerfield reach is an important part of the authorized project. We urge that $580,000 be appropriated to continue planning in this area.

The State of Louisiana, its Office of Public Works, in particular, wishes to commend the Appropriations Sub-Committees on Energy and Water Development and express our appreciation for the foresight and understanding exhibited in the past of the need for authorizing adequate levels of appropriations for water resources projects which are vital to the national interest. We solicit your further consideration of the recommendations presented herein.

Statement of the Bossier (La.) Levee District

This statement is presented in behalf of the Board of Commissioners of the Bossier Levee District and the citizens of Bossier and Red River Parishes, Louisiana, to urgently request adequate funding for the Bayou Bodcau and Tributaries Project for Fiscal Year 1986.

Congress, in 1956, authorized the study of the Bayou Bodcau and Tributaries Project in Bossier and Red River Parishes. In 1965, after nine years of studies and delays and after a well justified plan of improvement was developed, the project was finally authorized for construction. In 1974, after nine years of delays, studies and preconstruction planning, construction was finally begun, and the project was progressing satisfactorily.

Then in March, 1977, this project along with many other water resource projects throughout the Nation, was reviewed by the Department of the Army at the request of the President, under new criteria for enviromental, economic, safety and other factors. Although many other projects failed, this project passed all tests under the new review criteria; however, a study team, appointed by the President, arbitrarily decided that annual benefits in excess of project costs, were not adequate to offset the adverse enviromental effects, and it was recommended that the project be terminated. Congress subsequently passed legislation modifying the project and eliminating those projects features providing the greatest benefits to the people of the area.

At the time the project was delayed, the levee portion of the Bayou Bodcau and Tributaries Project was approximately 30% complete and no channel improvement work had been accomplished. The State of Louisiana, the Bossier Levee District, and other government agencies within the levee district began construction on the channel feature of the project in 1981. Since the initiation of the channel project, over $4,000,000 has been spent to complete the channel features. The State of Louisiana and the interested local agencies in Bossier and Red River Parishes realize the importance of this project and have spent local funds to construct the channel portion of this project.

The Bayou Bodcau and Tributaries Project is a complex project for the solution of complex and interrelated drainage and flood control problems. Both levee construction and channel improvement work are project features each of which depends on the other for successful operation of the overall project. The Sponsors of this project cannot complete this very important project without Federal participation as their funds are committed to the extreme limits presently and in the future.

In the Fiscal year 1982, Congress passed legislation mandating the Bayou Bodcau and Tributaries Project be constructed as originally authorized. However, since the projects authorization in 1965, land use changes have occurred within the project limits, especially south of Bossier City. Some lands that were

predominately agricultural are now being used for residential development. The U. S. Army Corps of Engineers have informed the local sponsor that some 5,000 acres of flood easements will have to be obtained south of Bossier City, some of which contain substantial residential development. The flood easements south of Bossier City were not included in the project as authorized and it is presumed that the authorized project intended to protect all lands subject to flood below Bossier City. Because of the land use changes, the U.S. Army Corps of Engineers has recommended that a comprehensive review of the remainder of the Project be undertaken which is scheduled to be completed in 1985, another lengthy delay to the timely completion of this project.

We are therefore urging that Congress fund the Bodcau and Tributaries Project at the maximum capability of the Corps of Engineers and that Congress urge the Corps of Engineers to complete the comprehensive review of the project in a timely manner so as project completion can be achieved at the earliest possible date.

STATEMENT OF THE BOSSIER, LA., CHAMBER OF COMMERCE

The Bossier Chamber of Commerce supports and urges the passage of sufficient funding to continue work on the Red River Waterway of Louisiana.

The benefits that this project will bring to this region and our nation are obvious. Not only would we benefit in the realm of economic development, but the creation of jobs, hydroelectric power uses, and the general enhancement of the quality of life serve as important side benefits to our citizens.

The Waterway will also serve as a flood control means and bank stabilization system, therefore, preserving many acres of excellent, tillable farm lands lost annually to bank cavings and erosion. Most importantly will be the development of the Waterway as an energy efficient transportation system for products into and out of the Red River Valley basin, thus greatly enhancing future commerce and trade.

The Board of Directors of the Bossier Chamber of Commerce strongly urge that the Congress of the United States continue development of the Red River Waterway by funding Lock & Dam #3 this year and thus establish a schedule for earliest reasonable completion of this waterway.

Please express to the Senate and to the House of Representatives our position on this most needed project.

Statement of Bossier City, La.

As Mayor of Bossier City, I would like to voice my strong support toward the continued development of Red River Waterway Project in Louisiana, and encourage the members of Congress to continue your support by making a commitment to this area by appropriating funds for these projects during Fiscal Year 1986.

The benefits derieved from making the Red River navigable to and beyond Shreveport/Bossier City are evident; it will enable us to create jobs for our ever-growing population, attract new industries and helping our existing industries, development of efficient generation of hydroelectic power, enable flood control and banks stabilization system, enhance the American Way of Life by stimulating and creating tourism, sports and recreational facilities.

Once again, I reiterate the importance of the development of the Waterway as an artery of energy efficient transportation for products into and out of the Basin, thus enhancing commerce and trade networks and adding to the economic growth of our great Nation.

Your favorable consideration of this request for the people of Louisiana will be deeply appreciated.

Don E. Jones
Mayor

Statement of the Shreveport, La., Chamber of Commerce

The Shreveport Chamber of Commerce supports and urges the passage of sufficient appropriations during Fiscal Year 1986 for the earliest possible completion of the Red River Waterway Project, including specific funds to begin work on Lock and Dam Number 3 at Colfax, Louisiana, and continued funding for the completion of Lock and Dam Numbers 4 and 5.

Completion of this important artery of energy efficient transportation will enhance commerce and trade networks, and aid the economic growth of the Nation, the State of Louisiana, and the Shreveport-Bossier communities. Most important to this area would be the re-birth of our area as a warehousing and distribution center, the generation of hydroelectric power, flood control, recreation, and the retention of valuable farmland which is currently being lost to erosion. Additionally, completion of this project will enhance Shreveport-Bossier's competitive edge in our economic effort.

Statement of the City of Natchitoches, La.

I personally support plans advocating the earliest feasible completion date for the Red River Waterway. The fastest reasonable schedule for this project is vital. Early completion of Lock and Dam No. 3 at Colfax, Louisiana is of great interest here in Natchitoches.

Completion of the Red River Waterway will be a tremendous benefit for Natchitoches and to all of Louisiana. Your support in this endeavor will be greatly appreciated.

STATEMENT OF SHREVEPORT, LA.

I am pleased to have the opportunity to provide input to the members of the Sub-Committee for Energy and Water Development of the Appropriations Committee.

The Red River Waterway Project significantly impacts a major portion of the state of Louisiana with the City of Shreveport at its northern terminus. The implementation and construction of the Red River navigation system is critical to the economic well-being of this entire area. We, in Shreveport, wholeheartedly endorse and support the concept of reopening the Red River to navigation and eagerly await its timely completion.

Lock and Dam #3 is scheduled to be constructed this year. Lock and Dam #4 and Lock and Dam #5 are to proceed under an established schedule of construction. The economic development and recreational impacts of this project cannot be overemphasized for all the residents of this area.

I strongly urge your support of this very worthwhile expenditure of public dollars, even in a time when budgetary constraints are severe. Once again, I appreciate the opportunity to comment and trust that you will consider this project favorably.

STATEMENT OF MARKSVILLE, LA.

The City of Marksville supports and urges the passage of sufficient appropriations during Fiscal Year 1986 to continue the work on the Red River Waterway of Louisiana. This appropriation should specifically include monies to begin work on Lock and Dam Number 3 at Colfax, La.

We need this Project because of the benefits that it will bring to this region and the Nation. Specifically, we look to the economic development, creation of jobs during and after construction, and enhancement of the quality of life the Waterway will mean to this community. The development of efficient generation of hydroelectric power as a side benefit is attractive to the citizens of this region. As a flood control and banks stabilization system, the Waterway will stop the waste of many acres of excellent, tillable farm lands lost annually to bank cavings and erosion. The recreational benefits are a great enhancement to the American Way of Life and of wildlife, sports and tourism. Most importantly will be the development of the Waterway as an artery of energy efficient transportation for products into and out of the Basin, enhancing commerce and trade networks and adding to the economic growth of the Nation.

Thus, we of the City of Marksville strongly urge that the Congress of the United States support the continuing development of the Red River Waterway Project by funding Lock and Dam Number 3 this year by establishing a schedule for earliest reasonable completion of this Waterway.

RESOLUTION OF THE POLICE JURY ASSOCIATION OF LOUISIANA

COMMITTEE ON PUBLIC WORKS AND WATER RESOURCES

WHEREAS, the opening of the Red River to navigation is important to the parishes and to the citizens of the State of Louisiana, and

WHEREAS, the construction of Lock and Dam No. 3 of the Red River Project is a vital part of the development of this overall project, and

WHEREAS, due to budget cuts, some question has been raised with regard to the continued funding of this project and the continued funding of the project is essential to the interests of local governments and the citizens of central Louisiana and of the State of Louisiana,

NOW, THEREFORE, BE IT RESOLVED that the Police Jury Association of Louisiana support the continued funding of the Red River Project and particularly the continued funding of Lock and Dam No. 3 of the Red River Project.

BE IT FURTHER RESOLVED that a copy of this Resolution be forwarded to the Louisiana Congressional Delegation.

THIS RESOLUTION ADOPTED by the Public Works and Water Resources Committee at the Annual Police Jury Association of Louisiana Convention held in Lafayette, Louisiana, on February 23, 1985.

CERTIFICATE

I, James T. Hays, Executive Secretary of the Police Jury Association of Louisiana do hereby certify that the above resolution was duly adopted by the Committee on Public Works and Water Resources of the Police Jury Association of Louisiana and that, thereafter, the said resolution was presented to the floor of the convention in the report of the Committee on Public Works and Water Resources, which report was adopted by the convention by voice vote.

Baton Rouge, Louisiana, this _____ day of March, 1985.

James T. Hays

James T. Hays, Executive Secretary
Police Jury Association of Louisiana

Statement of the Caddo/Bossier (La.) Port Commission

The members of the Caddo-Bossier Port Commission wholehearedly endorse and support the Red River Valley Association's Program of Work for Fiscal Year 1986, and respectfully request that the Sub-Committees on Appropriations submit to the full Senate and House of Representatives a recommended appropriation reflective of the amounts requested by the Association for the various projects cited in their Program of Work.

This request is made by the Caddo-Bossier Port Commission based upon the numerous overall benefits which will accrue to the four-state Red River Basin Area of Arkansas, Louisiana, Oklahoma and Texas from the completion of the projects included in the RRVA Program of Work -- namely, bank stablization to protect the thousands of valuable farm lands now being eroded by the ever changing course of the river; clean drinking water when the de-salinization programs are implemented; hydro-electric power generation; improved recreational facilities; and, perhaps most important of all to our immediate area, the return of navigation to the Shreveport-Bossier communities and the number of construction and permanent jobs the completion of the Red River Navigation Project will create.

The members of the Caddo-Bossier Port Commission fully realize that our nation faces urgent economic problems, and that funding for all programs must be designed with certain constraints in order to develop a federal budget with the lowest possible deficit. At the same time, the Port Commission members believe the Red River Valley Association has requested funding which meets this criteria, and therefore, we urge you to give serious consideration to providing the funding level requested by the Association in its Program of Work.

Our most vital immediate concern is for the continued funding to enable navigation on the Red River to the Shreveport-Bossier area as rapidly as possible. This concern is generated by the specific benefits we know will accrue to the citizens of Northwest and Central Louisiana, Northeast Texas and Southwest Arkansas with the availability of a public port facility to handle waterborne commerce from this area to ports throughout our nation and the world. We understand that some $90 million is currently being considered for funding the Red River Waterway Project, and we urge that at least $5 million of the already recommended funding for FY86 be committed to the beginning of construction of Lock and Dam #3.

Platform, Resolutions and Work Programs of the Red River Valley Association

1985

PLATFORM, RESOLUTIONS, AND WORK PROGRAM OF THE RED RIVER VALLEY ASSOCIATION

MEMBERSHIP RESOLUTION

The Red River Valley Association has for 60 years done notable work in the support and advancement of a program to develop the land and water resources of the valley to the beneficial use of all the people.

The Association is a voluntary group of citizens banded together to advance the economic development and future well-being of the citizens of the four state Red River Basin area.

To this end, the Red River Valley Association offers its full support and assistance to the various Port Authorities, Chambers of Commerce, Economic Development Districts and other local governmental entities in developing the area along the waterway.

The members of the Association, convened in this 60th Annual Meeting, realize that further successful work of the Association is dependent upon continued financial support by its membership and prospective membership. We, therefore, urge each member to conduct a vigorous membership drive in his community to promote a larger, more active participation in the affairs of the Association.

To accomplish our goals, we invite and urge all firms, corporations and individuals within the Red River Watershed to invest in this Association. The development of the great Red River Watershed offers to its citizens a challenge: the opportunity to be of service to community, state and nation, by participating in the objectives of the Red River Valley Association.

RESOLUTIONS OF RED RIVER VALLEY ASSOCIATION GENERAL INTERESTS

CLEAN WATER SUPPLY

The availability of an ample supply of clean water for use by the communities along the Red River has become an increasingly major concern of the millions of citizens residing in the Basin.

More and more, communities along the river are finding themselves faced with critical shortages of water, for current as well as future use. This could ultimately result in economic stagnation of the Basin. Solutions being developed by individual communities are not only extremely costly, but in many cases, are leading to unacceptable rivalry between the states and communities along the river.

The Red River Valley Association recommends that the Congress commit the Federal government to proceed, as quickly as possible, with the Red River Chloride Control Project and adopt a policy that will insure that the water supply needs of the communities along the Red River receive priority emphasis.

RED RIVER BASIN ARKANSAS, TEXAS, LOUISIANA, AND OKLAHOMA - COMPREHENSIVE STUDY

The Red River Basin Comprehensive Study (authorized by Pulbic Law 98-63, 30 July, 1983) was initiated in October 1983. A reconnaissance report is scheduled for completion in March 1985. The comprehensive study will recommend measures for: flood control; development of water supply, treatment and conveyance faccilities; generation of hydroelectric power; development and enhancement of the recreational potentials and enterprises of the region; and improvement of the rivers for navigation and port site development.

The Association is aware that Congress in the 1985 Energy and Water Development Appropriations bill (P. L. 98-866) enacted specific language regarding feasibility level studies on this project, ... "Therefore an additional $200,000 is included in the bill to begin the feasibility-level studies at full Federal expense. Lacking authority to require non-Federal cost-sharing, the Corps is directed to continue and complete these studies at full Federal expense." ... The Red River Valley Association agrees with the position Congress has taken regarding cost-sharing on this project.

The Red River Valley Association strongly supports continued funding of this study and requests Congress to appropriate full Corps of Engineers capability level funds for feasibility studies at 100% Federal cost.

RED RIVER WATERWAY PROJECT

The Rivers and Harbors Act of 1968 authorized the Red River Waterway Project featuring a navigation channel from the Mississippi River to Shreveport, Louisiana, and Daingerfield, Texas, and stabilization of the banks of the Red River from the Mississippi River to Shreveport, Louisiana; Shreveport, Louisiana, to Daingerfield, Texas; Shreveport, Louisiana to Index, Arkansas, and vicinity of Index, Arkansas to Denison Dam, Texas. Construction under this authorization has been initiated in the Mississippi River to Shreveport, Louisiana each.

Completion of the Red River Waterway will significantly boost the economy throughout the river basin and reduce widespread unemployment of the area. Average annual shipping on the waterway is expected to be over 12 million tons and estimated benefits are in the amount of $70 million annually. This type of progress should not be denied citizens of the Red River Basin and the nation. In order to begin realizing project benefits and minimize future project cost increase, planning, design, and construction should proceed in an orderly fashion in order to achieve project completion in a reasonable time.

With the Red River Navigation project's Lock and Dam #1 nearly 100% complete, and the second structure, the John H Overton Lock and Dam over 50% complete, the Red River Valley Association believes it an economic imperative that construction on the remaining three locks and dams continue as an established and organized schedule so that the project is completed on the Shreveport reach during FY 1994. Specifically we call upon Congress to begin construction on Lock and Dam #3 in earnest during FY 1986 and to endorse the resolution that Lock and Dam #4 and Lock and Dam #5. Specifically we call upon Congress to begin construction on Lock and Dam #3 in earnest during Fiscal Year 1986, and to endorse the resolution that Lock and Dam #4 and Lock and Dam #5 begin as soon as possible so that construction of the entire project can be completed at the earliest possible date. By establishing a solid timetable, the Congress will send a message to communities along the waterway to begin firm and definite planning and action to utilize the waterway and to be in position to immediately begin to realize the benefits of the completed waterway.

The Red River Valley Association urges Congress to appropriate construction funds for FY 1986 in the amount of $105,950,000 to continue orderly construction from the Mississippi River to Shreveport, Louisiana reach and provide $100,000 for resumption of preconstruction planning on the waterway segment from Shreveport, Louisiana, to Daingerfield, Texas, and the amount of $520,000 to Index. These funding levels are required for FY 1986 to result in comprehensive coordinated advancement of these basinwide features. Planning on the upper reaches must continue in order to initiate construction which complement ongoing construction in the lower reach and ultimately provide the maximum project benefits to the people of the Red River Basin.

RED RIVER LEVEES AND BANK
STABILIZATION BELOW DENISON DAM

Red River Levees and Bank Stabilization below Denison Dam is the authorization for constructing levees, flood control structures and bank stabilization below Denison Dam. The facilities constructed under this

authorization are the first lines of flood protection for the Red River Valley and its citizens. Accelerated and new caving of the river banks of Red River continue to endanger existing flood structures and levees as well as valuable agricultural lands, highways, railroads, utilities, homes and other valuable resources and improvements within the Red River Valley. A systematic program of bank stabilization and other flood control measures can prevent these disastrous losses that are presently occurring.

Because of planned construction of the Red River Waterway Project, a dangerous tendency has developed to de-emphasize construction of flood control and bank stabilization works under the Red River Levees and Bank Stabilization program. This tendency should be halted and reversed lest the impression be created that the program is no longer needed or has been completed.

The Red River Levees and Bank Stabilization below Denison Dam Project is the only comprehensive flood control program on the Red River containing authorization for construction of a variety of flood control measures, levees and other flood control works. Some of the projects planned in the original authorization project have not been completed, and these must be completed in order for the citizens of the Red River to derive necessary flood protection.

During Fiscal Year 1983 no funds were appropriated by Congress for the Red River Levees and Bank Stabilization Below Denison Dam and in FY 1984 and FY1985 only the minimum amounts were provided. Bank caving on Red River has progressed in several locations to a critical state. Railroads, major public highways, levees and other flood control works are threatened, and unless action is taken in the near future, these facilities will be destroyed, endangering lives and property of the citizens of the Red River Valley.

Therefore, it is imperative that Red River Levees and Bank Stabilization Below Denison Dam continue as authorized by Congress and that adequate funding be appropriated to accomplish the construction of this sorely needed protection with the greatest possible speed. The Red River Valley Association recommends that the sum of $19.70 million be appropriated for this project in Fiscal Year 1986 for the construction of these improvements and protection.

RED RIVER BANK STABILIZATION ABOVE LAKE TEXOMA

Thousands of acres of America's most productive farm lands along the banks of the Red River and some of its tributaries above Lake Texoma are being destroyed annually. This staggering depletion of the nation's most fertile lands caused by bank caving can be stopped by a systematic program of stream bank stabilization.

The Red River Valley Association recommends Congress provide the necessary authority and funding appropriations to the Corps of Engineers to move forward on this most vital program of bank stabilization above Lake Texoma.

EMERGENCY BANK PROTECTION

Although Federal projects have been authorized for flood control and navigation, many active caving banks cannot be stabilized because they are not yet sufficiently advanced or not included in earlier authorizations. The result is continuing rampant destruction of valuable lands, threatening vital flood control facilities and endangering high-cost improvements, such as bridges, pipelines, highways, railroads, utilities, cities and towns.

It is urgent that adequate funding of the item "Emergency Bank Protection" be continued to construct bank stabilization work as early as possible in the most critical locations instead of waiting several more years and losing many millions of dollars in damages. Further, continued neglect of these caving banks will substantially worsen alignment of the River, making future navigation realignment and stabilization much more costly and difficult. Many present caving banks have an existing alignment that is usable for the authorized navigation channel and should be preserved now.

In view of the critical needs for immediate bank stabilization at many locations along the river, and the great unnecessary losses to caving activity which have been suffered by the people of the Red River Valley in the past and which can be expected to continue in the absence of immediate stabilization construction, the Red River Valley Association strongly urges the Congress to appropriate the sum of $15.10 million in FY 1986 for Red River Emergency Bank Protection, so that some of the more critical of these locations can be stabilized.

RED RIVER BASIN CHLORIDE CONTROL

The Red River Valley Association is vitally concerned with the control of the ten natural salt pollution areas within the upper Red River Basin. There exists a vital and natural interest in reducing the mineral pollution of the Red River for economic growth as directly related to agricultural, municipal, and industrial benefit. The Association has actively supported the work of reducing man-made pollution of the river and has followed, with keen interest, the work of the Corps of Engineers in finding sources of natural salt pollution and devising ways of abating them.

Passage of the 1966 and 1970 Flood Control Acts (P.L. 89-789 & P.L. 91-611) authorized construction of measures to control the natural salt pollution from Areas VI, VII, VIII, IX, X, XIII, XIV, and XV in the basin, subject to the provision that construction on the project could not be started until approved by the Secretary of the Army. Initiation of construction on Area VIII on the Wichita River prior to the required approval by the Secretary of the Army, was authorized by the 1974 Water Resources Act. Construction on Area VIII, which includes the Truscott Brine Lake, was begun in February 1977 and is nearing completion. With the exception of Area VIII, construction on the remaining seven areas and two brine lakes of the Red River Chloride Control project is awaiting approval by the Secretary.

The approval of the Red River Chloride Control report, submitted to the Secretary of the Army in August 1977, was deferred pending an economic reanalysis conducted by the Corps of Engineers. The economic reanalysis, which reaffirmed the economic feasibility, was submitted to the Secretary of the Army for final action in 1981. The Red River Valley Association understands that the Secretary has approved the report, however has delayed release of the approval pendng resolution of cost-sharing questions with state and local entites.

The authorizing legislation intended removal of natural pollution as a Federal responsibility, while removal of man-made pollution is a non-Federal responsibility.

Since the time these responsibilities were identified, Red River Valley Association members have worked closely with the participating states to assure that local responsibilities have been successfully undertaken in a fully cooperative manner. This effort was performed in anticipation that Federal responsibilities would be executed in a responsible and timely fashion. The State of Texas has expended over $52 million controlling man-made salt pollution over the past years, and the State of Oklahoma is spending $5 million annually.

Therefore, we fully believe the non-federal role is being achieved and will continue to be strengthened. However, the cooperative project goal to make basin waters suitable for beneficial use cannot be attained unless the Federal government honors its long-standing commitment and discharges its responsibilities. The Red River Valley Association strongly requests that the Secretary of the Army immediately forward the report on this project to OMB with a favorable recommendation for the initiation of construction on the remaining areas, and the Corps of Engineers receive 100% Federal funding to initiate construction on Areas VI and X in FY86 at their full capability level.

OMNIBUS WATER LEGISLATION

The Red River Valley Association urges the United States Senate and House of Representatives to approve omnibus water legislation that would benefit the nation through the proper development and management of the water resources of America.

Therefore, the Red River Valley Association recommends the Congress give prompt and favorable consideration to an Omnibus water bill during the 99th Congress.

NON FEDERAL COST SHARING

The President of the United States and the Ofice of Management and Budget have directed the Department of the Army's Corps of Engineers to obtain cost-sharing agreements with non-Federal sponsors for (1) fifty percent of the total cost of the feasibility phase of studies conducted by the Corps and for (2) up-front financing of the construction cost in the following amounts: 100 percent of the municipal and industrial water supply cost, 100 percent of the hydropower cost, 75 percent of navigation cost, 50 percent of the flood control cost. Unless such agreements are obtained between the Corps and non-Federal sponsors on a new project, the President and Office of Management and Budget have refused to include the project as a new start in the budget; although, these cost-sharing requirements have never been approved by Congress and differ greatly from current cost sharing requirements enacted by previous legislation.

The Red River Valley Association believes that the application of these unauthorized cost-sharing requirements by the Administration is improper. The Association believes that such up-front cost-sharing requirements as those being implemented by the Administration are inappropriate and contrary to the national interest in the development of our nations's most vital national resource, our water. We are convinced that the long term impact of such requirements will be devastating to water resources development in our country and will accelerate a national water crisis.

Therefore, The Red River Valley Association requests that Congress (1) recognize the existing danger of a national water crisis and take all actions necessary to avoid such a crisis; (2) establish a national water policy which recognizes the importance of water in the development of all aspects of our economy; (3) develop a cost sharing program which will encourage the development of the water resources in all areas of our country, not just in those parts of the nation which can afford up-front financing; and (4) continue to resist pressure from the Administration to give a higher priorty to projects whose sponsors have agreed to the Administration's cost-sharing requirements, and continue to authorize projects and appropriate funds based only on policies which have been enacted by Congress and signed into law by the President.

The Association stands on the premise that the need for flood control in the Red River Basin, its tributaries and backwaters are part of a national flood control problem and should be solved with Federal funding. Further, due to the magnitude of most projects, non-Federal cost sharing would place these projects our of reach for local authorities.

NATIONAL ENVIRONMENTAL POLICY ACT

While recogizing the need and intent of the Congress in passing the National Environmental Policy Act of 1969, the Red River Valley Association also believes that the interpretation of this act has caused unnecessary economic hardship to the general citizenry. The delay in start of projects beneficial to the general goodwill causes the real cost of the projects to increase significantly, often to the point that they no longer are economically beneficial.

The Red River Valley Association urges Congress to revise this Act to:

1. Streamline administration procedures under the Act to speed up the time for completion and review of an Environmental Impact Statement in a federal project.

2. Recognize Man as a part of the environment and require that the effects upon Man be taken into account in the preparation and analysis of an Environmental Impact Statement.

3. Require that any person, association, or other entity contesting the adequacy of the administration procedures in preparation and/or review of Environmental Impact Statements to be required to post bond in evidence of financial responsibility to reimburse the constructing agency for cost of delay in the event that the Environmental Impact Statement and/or procedure appealed is found to be adequate, if not otherwise provided by existing law.

The membership of the Red River Valley Association is deeply concerned about unwarranted delays that add additional costs to Red River Basin projects resulting in severe hardships on the citizens of the Red River Basin. The membership urges that Congress direct public officials and agencies to proceed with sound long-range development of the Red River Basin and its resources for the benefit of Arkansas, Louisiana, Oklahoma and Texas.

RIGHTS OF WAY COST RESPONSIBILITY

The Flood Control Act of 1946 provided for enlargement of existing levees and construction of certain authorized levees on Red River below Denison Dam. Language in the Act requires local interests to be responsible for all lands, easements and/or rights-of-way required for construction of the improvements. Levee districts and local governing bodies have found that the number of enlargements, setbacks and berms has progressively increased and rights-of-way costs have sharply increased, particularly in the last 10 years. Financial burdens resulting from increased costs for rights-of-way have steadily depleted limited revenues and funds of levee districts and local public bodies throughout the Basin area. The impact is so great that presently there are serious monetary problems and realistic doubt as to the abilities of various levee districts to continue to meet financial obligations.

The requirement of local interests to furnish all rights-of-way is not consistent with Congressional policy and is not compatible with other major river basin projects for flood control. It is obvious that modifications are drastically needed to correct these inadequacies.

The Red River Valley Association strongly recommends Congress to amend the 1946 Flood Control Act to permit federal reimbursement to levee districts and local governing bodies for fair market value of lands taken for all flood control purposes including construction of new levees, levee setbacks, levee enlargement, levee turnovers, berms and cutoffs as necessary. Such modification is required at an early time to help relieve local levee districts and governing bodies of an extreme financial burden, and to assure progress advancement of the flood control program in the Basin.

UNIFORM RELOCATION ASSISTANCE ACT

The Levee Districts in the Red River Basin and the Red River Waterway Commission are experiencing increasing costs in the construction of navigation systems and construction and operation of flood control systems. The tax base of the basin lands is not capable of supporting additional tax loads to fund the relocation costs associated with levee setbacks, flood control works, and navigation projects.

The Federal Government through Public Law 91-646, known as the Uniform Relocations Assistance Act, provides that these relocation costs are the responsibility of and must be borne by local interests. The requirements and guidelines established in this act are such as to be extremely costly.

The Red River Valley Association requests the Congress to amend the Federal Uniform Relocations Assistance Act (PL91-646) to provide for federal payment of all such costs related to the construction of flood control and navigation projects in the Red River Basin of Louisiana, Arkansas, Oklahoma and Texas.

MAINTENANCE OF CHANNEL STABILIZATION WORKS

Past experience on Red River and many other river projects has shown conclusively that maintenance of channel stabilization works by local interests is impractical. Rapid changes in river conditions and alignment, such as occur frequently on Red River, demand drastic extensions and revisions of existing protective works, and, occasionally, required changes are so radical that relocations are necessary. Experienced personnel, special equipment and certain materials are not normally available from local interests when needed, and the costs of these items exceed the financial capabilities of local levee districts.

The Red River Valley Association recommends to Congress that the Corps of Engineers be authorized and directed to maintain all bank stabilization and channel training work on Red River.

BANK STABILIZATION
INDEX, ARKANSAS TO DENISON DAM, TX

Widely fluctuating stages and high flows during the past several years have caused sharp increases in bank caving along the Red River from Index, Arkansas, to Denison Dam. This accelerated bank caving has caused the loss of valuable vital improvements and non-replacable prime agricultural lands. Flood control structures and levees which protect the Valley from disastrous floods are also endangered.

These disastrous losses can be stopped by a systematic program of bank stabilization. Progressive construction of such a program is absolutely essential to the safety, growth, and well-being of the Red River Valley. To further delay this vitally needed protection would be short-sighted.

In view of the fact that construction of bank stabilization is so badly needed, and that the states of Oklahoma, Arkansas, and Texas have agreed to the authorized cost-sharing requirements, the Red River Valley Association strongly urges that the sum of $350,000 be appropriated in FY 1986 to continue preconstruction planning work.

RED RIVER BASIN BENEFICIAL USES OF SALT WATER

On September 23, 1982, the U. S. House of Representatives, Committee on Public Works and Transportation, adopted a resolution directing the Corps of Engineers to determine the feasibility of salt gradient solar ponds and associated power generation equipment to collect and store solar energy and to generate electric power in the Red River Basin.

The inherent thermal storage capability of salt gradient solar ponds and the associated solar pond power plant (SPPP) concept offers a potentially viable alternative energy source which makes use of abundantly available natural resources (sun, salt, and land) and existing technology (i.e. heat exchangers and low temperature turbine generators). The necessary resources are readily available in the Red River Basin, particulary in western Texas and Oklahoma where there are identified sources of salt brine in economical quantities feasible for use in conjunction with solar ponds.

Limited scope reconnaissance studies performed in FY 1984 by the Tulsa District Corps of Engineers indicate a strong likelihood that a system of solar pond power plants can be economically feasible when constructed in conjunction with the chloride control measures in thje Red River Basin. The report recommends expanded reconnaissance studies beginning in that basin.

The Red River Valley Associatin strongly supports the investigation and requests that the stated FY86 capability level of the Corps of Engineers be appropriated at 100% Federal cost to continue these studies.

HYDRO-ELECTRIC POWER DEVELOPMENT

When Red River Basin projects were initially authorized, the need for alternate energy sources was not deemed of paramount importance to the welfare of the nation, and, therefore, hydro-electric power generation was not incorporated as a feature in any of the authorized projects.

Since the mid-70's the energy situation has changed drastically, forcing the nation to begin investigating methods of developing and utilizing alternate energy sources such as hydro-electric power. In keeping with this important trend, the Corps of Engineers has been authorized to conduct feasibility studies for hydro-power development, the locks and dams on the Red River Navigation Project, as well as other projects in the Red River basin.

The Association strongly urges continued funding for these feasibility studies to ensure that optimum power generation can be achieved through these projects while, at the same time, insuring that the water supply needs of the community affected by these projects continue to receive priority emphasis.

REGULATING LAND USE

In the past, proposals have been offered in the U. S. Congress and in some state legislatures to regulate and control the use of privately owned lands without compensation to the owner. These "land use" bills have been recognized by these legislative branches of government as contrary to the Fifth Amendment to the Constitution of the United States and soundly defeated each time they were offered. This Association opposes this type national land use legislation.

MITIGATION LANDS

The present interpretation held by the U.S. Fish and Wildlife Service in relation to "mitigation lands" for water conservation projects greatly hinders development of water supplies, flood control and bank stabilization projects. This interpretation requires taking large amounts of lands out of private ownership for wildlife management purposes. This reduction in private land ownership represents a considerable economic and tax base loss.

The Association, recognizing the need for a balance between the environmental aspects and people's needs, strongly urges Congress to press for a revision of the present interpretation held by the U.S. Fish and Wildlife Service in order to make it compatible with Congressional intent and the needs of the people.

SMALL WATERSHED PROGRAM

The Red River Valley Association has long recognized the value of the Small Watershed Program (Public Law 566) for protecting and improving the soil and water resources of our nation. Resource improvement projects in small watersheds of less than 250,000 acres, as provided in Public Law 566, gives rural and small- town America an effective tool to span the gap between large watershed resources improvement projects of the Corps of Engineers and small, individual projects, carried out by landowners and operators. Public Law 566 has become a well-known and respected program of federal, state and local partnership in resource improvement and protection in the Red River Valley.

The Red River Valley Association supports of Small Watershed Program and urges its effectiveness be increased through appropriate increases in funding and personnel.

RESOURCE CONSERVATION AND DEVELOPMENT PROGRAM

The Resource Conservation and Development (RC&D) program of the United States Department of Agriculture is authorized by Public Law 87-703. The RC&D program provides a vehicle for the local initiative that can bring together all applicable federal and state agencies to provide technical and financial assistance to carry out needed environmental, cultural, and economic enhancement developments.

The RC&D program is now active over 75% of the four state Red River Basin.

The Red River Valley Association realizes the beneficial impact the RC&D program has on our area's overall economic stability and therefore fully supports the RC&D program on the local and regional level to strengthen its potential overall effect and urges Congress to maintain an adequate funding and program direction.

CADDO LAKE

The States of Arkansas, Louisiana, Oklahoma and Texas have entered into a binding agreement, "The Red River Compact", that has been ratified by Federal Mandate. A part of the Compact addresses the Cypress Basin (Texas and Louisiana) and apportions of the water of Caddo Lake.

The Red River Valley Association supports the accomplishment of the feasibility study currently underway by the Corps of Engineers, Vicksburg District, to determine the potential of Caddo Lake to provide a part of the water supply needs of the region and we urge the Congress continue funding the study.

MISSISSIPPI RIVER AND TRIBUTARIES FLOOD CONTROL PROJECT

The Red River Valley Association endorses the Mississippi River and Tributaries Flood Control Project, including all of its features and components and stresses the importance of aggressively completing all features, particularly as it relates to the Red River Basin and its improvements. Since the Red River is a major tributary to the Mississippi River and Tributaries Flood Control Project, the Red River Valley Association endorses the flood control and navigation improvements of the MR&T Project and necessary appropriations for completion.

CONGRESSIONAL AUTHORIZATION FOR NEW PROJECT STUDIES

There have been instances of project studies being authorized without prior notification of the responsible state and local agencies. This compounds the providing of adequate information and justification data from the state and local agencies causing long delays and insufficient investigations. Consequently, many worthwhile projects may not be justified or constructed. The Association recommends that a procedure be established whereby the responsible agency of the State will be contracted and requested to comment on and submit its views concerning the desirability of the proposed project study before Congressional authorization is made.

FEDERAL PROCEDURE FOR A PROJECT STUDY

Current procedures require the Corps of Engineers to hold three or more public hearings for all studies authorized by Congress. The initial public hearings held at the beginning of the study provide the proponents and opponents of the proposed project ample opportunity to express their desires and needs. Prior to submission of the completed study to higher authority for review, a final public hearing is required. Additional interim public meetings are held to obtain recommendations of the local interests. These additional interim hearings result in an overall project delay, increased study costs and, being repetitious, do not advance the project in any way. Former procedures used by the Corps of Engineers required the Division Engineer to issue a Notice of Survey Report to all interested parties effectively accomplished the overall purpose of the second public hearing.

The Association is opposed to the project study procedure requiring the additional hearing and recommends that the former procedure be re-established.

CHANGES DURING A FEDERAL STUDY

During the phase of completing the General Design Memorandum in an authorized study, local interests, levee boards and the state governmental offices of primary interest should be kept advised of the study progress. In particular, any changes of the originally authorized plan as it may affect the project and/or the purpose of the project should be communicated to the local and state governments.

CLARIFYING DEFINITIONS

The Association urges Congress to clarify the definitions of "Waters of the United States" and "Navigable Waters" as set forth in Section 404, Public Law 92-500, so as to make unmistakably clear the intent of Congress; that Federal control of construction of water resource projects through control of the discharge of dredged or fill material be limited to waters which are, in fact, navigable and used as a means to transport interstate commerce.

ARKANSAS RESOLUTIONS

RED RIVER WATERWAY PROJECT, SHREVEPORT TO INDEX ARKANSAS

Completion of the Red River Waterway Navigation Project to Index, Arkansas, will significantly boost the economy throughout the river basin and provide jobs in the area. Great economic benefit will accrue not only to that portion of the river wherein navigation is currently authorized, but also to the area between Shreveport, Louisiana and Index, Arkansas, resulting from a comprehensive bank stabilization program. This type of program should not be denied citizens of the Red River Basin and the nation.

The Red River Valley Association urges the Congress to appropriate Corps of Engineers capability of $520,000 for the continued planning of the reach of Red River from Shreveport, Louisiana to Index, Arkansas. Adequate funding is required to result in comprehensive coordinated advancement of these basin-wide features which will allow construction to commence as soon as possible in the reach between Shreveport to Index. Planning on this upper level must be accomplished in order that construction can be completed for the navigable portion of the channel from the Mississippi River to Shreveport on a timely basis, as this project will complement the navigation channel so that maximum basin benefits can be provided simultaneously.

DAYS CREEK/ NIX CREEK

Days Creek and Nix Creek and their tributaries have caused frequent inundation of residences and business properties within Texarkana, Arkansas, and Texarkana, Texas. A plan has been prepared by the Corps of Engineers for improvement of these creeks and their tributaries to substantially reduce flooding in these cities.

Funds were appropriated by the Congress to undertake the Phase I design memorandum stage of advanced engineering and design, but the Chief of the Corps of Engineers refused to spend the funds following review of a feasibility study that showed that some of the benefits were not applicable and that the cost benefit ratio was not at an acceptable level.

The Red River Valley Association believes the project would prove to be a viable project if an updated feasibility study is conducted to include numerous factors not considered by the previus study. We, therefore, request that Congress provide a sufficient sum of money for Fiscal Year 1986 to support the full capability of the Corps of Engineers to conduct a re-study of the feasibility of this project.

LITTLE RIVER REVETMENT

The City of Hope, Arkansas secures its municipal water from the Little River, a tributary of the Red River. It has been determined by the Hope, Arkansas Water and Light Commission that the Little River Revetment is inadequate to insure the maximum cleanliness and to prevent infiltration of Red River flood waters into their water supply. The height of the revetment must be raised from an elevation of 243 feet above mean sea level (MSL) to a height of 250 feet MSL.

RESHAPING LEVEES

The Red River Valley Association recommends Congress provide funding to initiate construction, or pre-construction planning if necessary, of the re-shaping of the levees on the main stem of Red River in Arkansas to conform the levees to the new flow line established by a recent study of the Corps of Engineers.

LOUISIANA RESOLUTIONS

FIRM CONSTRUCTION SCHEDULE FOR COMPLETION OF RED RIVER NAVIGATION PROJECT TO SHREVEPORT-BOSSIER CITY BY FY94

With the Red River Navigation projects' Lock and Dam No. 1 nearly 100% complete and Lock and Dam No. 2 approximately 50% complete, the Red River Valley Association believes it an economic imperative that construction on the remaining three Locks and Dams be undertaken in such a manner as to assure the projects completion to the Shreveport-Bossier City area by FY94. To allow this, we call upon Congress to provide the funding to enable Lock and Dam No. 3 construction to begin in earnest during FY86. To allow this, we call upon Congress to provide the funding to enable Lock and Dam #3 construction to begin in earnest during FY86, and a timetable of construction for Lock and Dam #4 and Lock and Dam #5 as soon as possible so that the entire project can be completed at the earliest date.

At present the communities of Alexandria/Pineville, Natchitoches, Colfax and Shreveport/Bossier City are in the process of planning and developing public port facilities for their respective areas. The Caddo-Bossier Port Commission has already purchased 1,150 acres for a public port/industrial park complex and is planning to acquire an additional 900 acres because of the intense interest for a public port facility among existing industries in the Port Commisson's service area (which extends to Dallas-Ft. Worth). (A port users survey undertaken for the Port Commission in 1981 shows a total of more than 12 million tons of cargo would go through a public port facility in the Shreveport-Bossier City City from companies now existing in the Ark-La-Tex.)

Planning to ensure public port facilities will be ready to benefit the local, state and national economy when navigation is returned to these communities has been made tremendously difficult because of the lack of a firm construction schedule for the remaining three Locks and Dams. Thousands of badly needed jobs are at stake, and therefore, the Red River Valley Association recommends Congress commit the funds necessary to construct the remaining three Locks and Dams, so that they can be completed by FY94; to allow sensible planning to proceed; and to ensure that the project lives up to its full economic development potential in the soonest possible time frame.

EMPLOYMENT OF LOCAL PEOPLE

A significant advantage of construction projects by the Corps of Engineers is the employment of local people, benefiting the unemployed and providing higher employment of the under-employed within the project area. Corps of Engineers policies allow that construction contracts be written to require that up to 80 percent of the labor force involved be local labor. Even so, a great majority of the labor force employed by private contractors on the Red River Waterway projects come from out of state. According to the Red River Valley Area Council, there are qualified and skilled construction workers in the Red River Valley in Louisiana who could perform the work required.

The Red River Valley Association urges the Corps of Engineers and Congress to do all within their power and within the law to enforce and encourage the employment of as many people as possible from the surrounding local communities in the construction of the Federal projects along the Red River Waterway.

CYPRESS-BLACK BAYOU WATERSHED

Local interests and the State of Louisiana, in cooperation with the United States Department of Agriculture Soil Conservation Service, have advanced construction of this project to the point where many benefits are being realized. Features of the project include land treatment measures; two multiple purpose reservoirs for irrigation, recreation and municipal water supply; a comprehensive recreational facility development; and approximately 55 miles of channel improvement for flood prevention and agricultural water management; and 11 weirs, two pumping plants and water control structures for distribution and irrigation use of water. The features of the watershed remaining to be constructed are channel improvements, weirs, pumping plants and water control structures. Through these features, the agricultural water needs of the central Bossier Parish, Louisiana area can be met during most years. Additionally some assistance is provided in meeting municipal and industrial water needs.

The Red River Valley Association expresses its sincere appreciation for Congressional support in funding the Cypress-Black Bayou Watershed development and recommends that the financial support necessary for completion of the project be provided.

BODCAU RESERVOIR WATER SUPPLY STUDY

Bodcau Reservoir was constructed for flood control in 1949 by the Corps of Engineers. However, northwest Louisiana is currently experiencing water supply problems. Existing sources of water have been taxed beyond their dependable supply, and water rationing is common practice in several communities of northwest Louisiana. The growing population of the Shreveport-Bossier City metropolitan area compounds the problem of insufficient water supply, necessitating the development of available sources of water to meet the present and future water demands in northwest Louisiana.

The Bossier Parish, Louisiana Police Jury and the City of Bossier City, Louisiana have requested the Corps of Engineers to study Bodcau Reservoir as a source of water supply to meet existing and future water demands. Preliminary reports indicate that Bodcau Reservoir can supply an adequate amount of water with minor modification to existing structures.

The Red River Valley Association recommends that the Corps of Engineers proceed with the necessary studies in a timely manner so that an adequate water supply may be obtained, and the orderly development of the region continue.

BAYOU BODCAU AND TRIBUTARIES

The Bayou Bodcau and Tributaries Project was authorized in 1965, with construction actually beginning nine years later in 1974. This project, as originally planned, provided for improvements to Cypress Bayou, Red Chute Bayou, Loggy Bayou, and Flat River with construction of levees, channel enlargement and drainage structures. Approximately 62 miles of levees and 12 miles of channel enlargement were proposed to be constructed.

The Bayou Bodcau and Tributaries Project has progressed to the point where the Corps of Engineers has constructed 15 miles of levee on the northern end of the project, ending immediately south of Bossier City, Louisiana and local interests have constructed the 12 miles of channel improvement.

Since the project authorization in 1965, land use changes have occurred within the project limits, especially south of Bossier City, Louisiana. Lands that were predominately agricultural are now being used for residential development. The Corps of Engineers has informed the local sponsor that some 5,000 acres of flood easements will have to be obtained south of Bossier City, some of which contain substantial residential development. These flood easements south of Bossier City were not included in the project as authorized.

Because of the new developments and land use changes, the Corps of Engineers has recommended that a comprehensive review of the remainder of the project be undertaken.

The Red River Valley Association strongly urges the Corps of Engineers to expedite their review of the project, and to provide necessary modifications for the protection of all lands subject to flooding south of Bossier City, Louisiana.

The Red River Valley Association also urges that Congress continue to fund the Bayou Bodcau and Tributaries Project at a level necessary for project completion at the earliest possible time.

OVERTON-RED RIVER WATERWAY, LOWER 31 MILES

Construction of channel improvements in the lower 31 miles of the Overton-Red River Waterway Project, which forms an integral part of the Red River Waterway Project plan, began several years ago and has progressed to the point where only a few project features remain to be constructed. Improvements in this reach are important to both the Red River Project and the project for navigation on the Ouachita and Black Rivers. In order to assure that the remaining items of work will be accomplished in a timely fashion, the Red River Valley Association urges that Congress and the Corps of Engineers take no steps to de-authorize the Project or to declare it completed before construction of the remaining items have been accomplished.

ATCHAFALAYA BASIN

The Atchafalaya Basin is a key element in the flood control plan for the Mississippi River and its Tributaries, that directly involve the Red River Basin area. Flood control is the primary purpose of the Atchafalaya Basin and its capability must be maintained and improved.

The Red River Valley Association opposes any plan for use of the Atchafalaya Basin which reduces its effectiveness for flood control. However, the Association does not oppose other uses of the basin, provided they do not interfere with or prevent its use for flood control purposes.

The Association urges that the studies being made on the Atchafalaya Basin area be completed as soon as possible and construction of the necessary flood control works in the area be resumed immediately.

RED RIVER BACK WATER AREA

The Red River Backwater Project was authorized by the Flood Control Act of 1941. The act specifically authorized the Tensas-Cocodrie levee system and provided for additional flood protection work in the Red River Backwater area. A review of the flood control needs of the area was made in the late 1950's, and the result of this review is printed as House Document 308 (88/2); HD 308 was approved by the Flood Control Act of 1965 (PL 89-298). The review concluded that flood protection works were justified and authorized for the Larto Lake to Jonesville Area, the Sicily Island Area, and the Below Red River Area. The review also concluded that a pumping plant was justified for the Tensas-Cocodrie Area; the pumping plant was specifically authorized by the Flood Control Act of 1965. Public Law 96-367 contains language authorized by the Flood Control Act of 1965 affirming the authorization of flood control works in the Red River Backwater area.

The Tensas-Cocodrie and Larto Lake to Jonesville levee systems have been constructed and are providing flood protection to valuable farm land, rural residential areas, and developed areas. Segments of the Tensas-Cocodrie Levee System are below grade and need to be enlarged. The Tensas-Cocodrie Pumping Plant is under construction and, when completed, will provide additional flood protection to Tensas-Cocodrie area. Congress has provided funds to initiate construction of the Sicily Island area project. Advanced planning of the Below Red River Project is continuing.

The need for flood protection in the Red River Backwater area is critical. The entire area has suffered tragedies in the flood years of 1973, 1974, 1975, and 1983, and has widespread flooding at least annually, and sometimes more frequently. The flood protection of these specific areas is justified, authorized and should be completed promptly.

The recommended plan for the Below Red River Project included construction of a new levee, upgrading the existing Moncla to Lake Long levee, a flood gate and pumping plant, an interior channel to route drainage to the outlet, and minor structures, as needed, to facilitate drainage of low areas. This plan will meet the needs of area inhabitants by reducing the adverse impacts of flooding, and providing for intensified agricultural productions. It has been endorsed as the best levee plan by the U.S. Fish and Wildlife Service and the Louisiana Department of Wildlife and Fisheries.

The Red River Valley Association urges that Congress approve the full capability of the Corps of Engineers for the Below Red River Project in FY 1986 for the completion of advanced planning, and that the Louisiana Congressional delegation do all in its power to expedite construction of this much needed project.

The planning report for the Bushley Bayou Project has been completed. The Red River Valley Association urges the support of the Bushley Bayou Project, as recommended by the Mississippi River Commission, and that Congress approve the full capability of the Corps of Engineers for FY 1986 so that advanced planning of this vital project may continue.

Many changes have occurred in the usage of lands, drainage patterns, vegetative cover, flooding frequencies, and other factors in the Larto Lake-Saline Area in recent years. The changes have resulted in serious water quality problems in the area. On January 22, 1973, the Senate Public Works Committee adopted a resolution providing for a comprehensive study of these problems. The study encompasses 200,000 acres within Catahoula, LaSalle, Rapides, and Avoyelles Parishes, generally south of Catahoula Lake.

The Red River Valley Association requests that Congress approve the full capability of the Corps of Engineers in Fiscal Year 1986 for completion of this study, and further urges Congress to support all of the above features of the Red River Backwater Project and to approve the full capability for FY86.

BAYOU COCODRIE AND TRIBUTARIES

This project was authorized in 1941 and provides a drainage outfall for a large area of central Louisiana, including 120 miles of drainage channel, three water control structures, and a major drainage structure in the West Atchafalaya Basin Protection Levee. The upper 100 miles of the project extending from Rapides Island west of Alexandria, Rapides Parish, to the town of Washington, St. Landry Parish, is known as the Bayou Bouef-Cocodrie Diversion Channel. The lower 21 miles is Bayou Courtableau.

Most of the project was completed in 1952. Since that time, as a result of extensive developments throughout this intercepted drainage area, stages in the main channel system have continued to rise and have exceeded the design water surface by several feet on a number of occasions. Under present conditions widespread flooding of agricultural lands and extensive damages from flooding of residential area occurs and is increasing with each passing year. There is a critical need for improvement to these drainage channels which are intercepted by construction of the Red River South Bank and West Atchafalaya Floodway Levees.

For the lower part of the project (Bayou Courtableau), advanced engineering and design were considered to be completed in 1980. It now appears additional studies of this portion of the project are necessary. These additional studies will continue to delay construction of several PL 566 projects for drainage improvements in this area which have not been allowed to proceed because of inadequate outlet through Bayou Courtableau.

For the upper part of the project, Bayou Boeuf-Cocodrie Diversion Channel, the system is under a continuing re-study to determine improvements that need to be accomplished in the system.

The Red River Valley Association urges that these additional studies be promptly completed so that construction of this outlet can begin.

BAYOU RAPIDES PUMPING STATION NEAR ALEXANDRIA, LOUISIANA

The Bayou Rapides Pumping Plant was constructed in 1930-1931 by the State of Louisiana and the Red River, Atchafalaya and Bayou Boeuf Levee District with a pumping capacity of 100,000 gallons per minute. Located beneath the pumping station are six (6) reinforced concrete gated openings to provide drainage by gravity when Red River stages permit. During high river stages, the floodgates must remain closed.

The present pumping capacity should be increased eleven times to 1,100,000 gallons per minute which is necessary to provide reasonable protection against flooding for a 25-year storm frequency.

This pumping station is a necessary integral major structure incorporated into a complicated drainage system for the City of Alexandria, Louisiana and connects to the Bayou Rapides-Bayou Cocodrie Drainage system, and the Red River.

As a major structural feature providing for intercepted drainage resulting from Federal levee construction, it is clearly established that replacement of this pumping station with an adequate capacity is a responsibility of the Federal Government.

The Red River Valley Association strongly urges the Corps of Engineers to expand the existing Bayou Cocodrie & Tributaries study and include the Bayou Rapides Pumping Station as a feature of the overall interconnected drainage system, with a view to authorization and construction of adequate pumping and/or drainage facilities. Further, if such addition to the existing study results in drastic delay and/or funding impacts, then the Red River Valley Association recommends separate Congressional authorization for this urgently needed study.

COMPREHENSIVE BASIN STUDY
CANE RIVER ISLAND FLOOD CONTROL STUDY

In June, 1956, authorized by the Flood Control Act of 1936, construction was completed on the existing Red River flood control system from the city of Natchitoches, Louisiana, to the town of Marco, Louisiana. The project consisted of the construction of levees on the south bank of the Red River, a dam at the mouth of Cane River, and enlargement of interior drainage to give protection to 135,000 acres of land in the Cane River Island area from Red River overflow.

During periods of high water drainage gates must be closed preventing interior drainage, and backwater flooding occurs along the Cane River and Old River from the Red River. Continued development of the area and flooding in recent years resulted in a resolution adopted by the Committee on Public Works of the U. S. Senate to re-study the area for possible further flood control measures. In February, 1978, at the urging of local interests, the study of the Cane River Island area was expanded to include the entire Cane River Basin.

The Red River Valley Association urges that this study be conducted and completed as quickly as possible so that construction of needed additional flood control devices can be accomplished in the near future. Further, the Association recommends that the sum of $335,000 be appropriated for this comprehensive basin study in Fiscal Year 1986.

ALOHA - RIGOLETTE PROJECT

This project, authorized in 1941, and constructed during the period from 1948 to 1954, provides for protection of some 58,000 acres of alluvial land during high stages of the Red River. Drainage from 340,000 acres that must flow through protected areas during lower river stages is disposed of by gravity flow through two 10 ft. by 10 ft. gated concrete drainage structures in the levee at the lower end of the project. This protected area has continued to develop agriculturally since construction of the project and now additional gates are needed to allow adequate gravity drainage during low river stages. As a result, local interests have requested that additional studies be made of the project, paying particular attention to the adequacy of the floodgate.

A study is essentially complete by the New Orleans District, and a draft report is expected to be ready for public review by May, 1985.

The Red River Valley Association urges that the feasibility study be completed on schedule, that the study contain a recommendation for construction of additional improvements for drainage of the area, and that Congress appropriate not less than $500,000 in Fiscal Year 1985 to continue planning and engineering on the project so that it can be advanced to the construction stage as soon as possible.

LOWER RED RIVER SOUTH BANK LEVEE

The South Bank Levee is a feature of the Mississippi River and Tributaries Flood Control Project and calls for improvement of the existing levee from the community of Hot Wells, Louisiana to Moncla, Louisiana. Construction procedures include: strengthening and enlarging substandard levee reaches, raising the levee to the designed grade, bank stabilization to protect the levee, and other miscellaneous levee and roadway improvements. This levee is of extreme importance since it protects 1.25 million acres of valuable lands and improvements from flooding. This work should be completed in a timely and orderly manner; therefore, the Red River Valley Association endorses an adequate appropriation of by Congress for Fiscal Year 1986.

EASTERN RAPIDES - SOUTH CENTRAL AVOYELLES DRAINAGE DISTRICT

After many years of delay, the Eastern Rapides-South Central Avoyelles Drainage Project was authorized as a feature of the Mississippi River and Tributaries Flood Control Project. Unfortunately, construction has not been started subsequent to the authorization of 1970.

This project encompasses the upper part of a drainage system that would directly and indirectly benefit parts of the parishes of Rapides, Avoyelles and Evangeline where more than 206,000 acres of valuable agricultural land are subject to flooding.

Flooding of this acreage occurs at least four times a year. This flooding is the result of Federal Government authorized construction of the South Bank Red River Levee and the West Atchafalaya Basin Protection Levee which intercepted the natural drainage channels. Additionally, one large urban area, Alexandria, Louisiana, is adversely affected by the poor drainage conditions that drastically need improvement.

There is an urgent need to begin work on this extensive project, which would traverse southeasterly from Alexandria for some 80 miles before entering the Atchafalaya Basin Floodway.

Many studies have been made and public hearings have been held, and final report scheduled for November, 1984: however, it has come to our attention that after all of these studies, additinal mitigation is now being required as a result of comments by the U.S. Fish and Wildlife Service. This additional study will delay completion of the final report until June, 1985.

The Red River Valley Association strongly recommends that the Corps of Engineers expedite their review of the project so construction can begin as soon as possible.

LOWER RED RIVER LEVEES

The South Bank Levee in the Red River, Atchafalaya and Bayou Boeuf Levee District from Boyce, Louisiana to Moncla, Louisiana is a feature of the Mississippi River and Tributaries (MR&T) Flood Control Project. A continuation of this same levee from Moncla to Lake Long, Louisiana is under a different authorization, thereby denying the benefits of the MR&T authorization to the people and property in the protected area.

The North Bank Levee of Red River, in the same Levee District, does not benefit from the MR&T authorization, yet they also protect the lives of many people and vast areas of farm land and improvements.

Both the South Bank and the North Bank Levees of the Red River are part of a continuous protective system; the lower few miles from Moncla to Lake Long are a part of that system.

The Red River Valley Association recommends that the Congress authorize the Corps of Engineers to review the present authorization of these levee systems, with the view of including all portions in the same MR&T authorizations as to provide equal benefits and protection to the people and property.

RED RIVER MASTER PLAN FOR RECREATION

Recognizing that recreation is an integral component of the Red River Waterway Project, the Association supports the development of recreational facilities as a part of the overall project construction.

A Master Plan for Recreation has been cooperatively developed by the Red River Waterway Comission of Louisiana and the Corps of Engineers. The Red River Valley Association urges approval of the Master Plan by the Chief of Engineers and Secretary of the Army, and encourages and supports the development of recreational facilities in accordance with the plan.

OKLAHOMA RESOLUTIONS

HUGO LAKE, KIAMICHI RIVER, OKLAHOMA

Hugo Lake was authorized by the Flood Control Act of 1946 for the purposes of flood control, water supply, water quality, recreation, and fish and wildlife. Construction began in October 1967, and impoundment of the lake began in January 1974. The damsite is located at river mile 17.6 on the Kiamichi River about 7 miles east of Hugo, Oklahoma.

A study to determine the feasibility of adding hydropower facilities to the existing Hugo Lake project is being conducted under the authority of Section 216, Public Law 91-611, December 1970. Preliminary studies completed in October 1982 showed that a 15 mega-watt hydropower plant may be economically feasible and detailed feasibility studies are being continued. The Red River Valley Association recommends that the Corps of Engineers receive funds equivalent to their full capability to continue this study at 100% Federal cost.

PINE CREEK LAKE, PINE CREEK, OKLAHOMA

Pine Creek Lake was authorized by the Flood Control Act of 1958 for the purposes of flood control, water supply, water quality, and fish and wildlife. The damsite is located on the Little River about 5 miles northeast of Wright City, Oklahoma.

A study to determine the feasibility of adding hydropower facilities to the existing Pine Creek Lake project is being conducted under the authority of Section 216, Public Law 91-611, December 1970. Preliminary studies, completed in October 1982, showed that a 40 mega-watt hydropwer plant may be economically feasible. Detailed feasibility studies are continuing and are scheduled for completion in Fiscal Year 1986. The Red River Valley Association recommends that the Corps of Engineers receive full capability to continue this study at 100% Federal cost.

LUKFATA PROJECT, OKLAHOMA

Lukfata Lake on Glover Creek in central McCurtain County in southeastern Oklahoma was authorized by the Flood Control Act of 1958 as a component of the six-reservoir system for flood control in the Little River Basin. All of the reservoirs except Lukfata Lake have been completed. Without the Lukfata project, the system does not function as planned.

In the Energy and Water Development Appropriations Bill of 1982, HR 97-177, 14 July 1981, the committee on appropriations directed the Corps, within the limits of available funds, to study the potential of hydropower generation at Lukfata Lake.

A preliminary study was completed in May 1983. The study showed that a 65 mega-watt hydropower plant could be developed as a part of the project at the lower site. However, any development on Glover Creek would adversely affect a threatened species, the leopard darter, since the creek is listed as its critical habitat. Consultations between the Fish and Wildlife Service and the Tulsa District Corps of Engineers on mitigation of any adverse effects are being finalized in Fiscal Year 1985. If reports ofthe leopard darter in other streams in southeastern Oklahoma are accurate, then Glover Creek should be removed as a critical habitat. The Red River Valley Association supports continued studies of the Lufata project by the Corps of Engineers, at 100% Federal cost.

RED RIVER AND TRIBUTARIES ABOVE DENISON DAM
TEXAS, OKLAHOMA, AND NEW MEXICO

Rush Creek Interim Study, Oklahoma

The Red River Valley Association, the Oklahoma Water Resources Board, and the City of Chickasha, Oklahoma support the current interim study being conducted by the Corps of Engineers to assess the potential for water resouces development in south-central and southwestern Oklahoma. The current efforts are concentrated on seeking future water supply alternatives for the Chickasha area. It is anticipated that the reconnaissance study which is scheduled to becompleted in FY 85, will identify a Federal interest in continuing this study. It is requested that 100% Federal funds be appropriated in FY86 to continue feasibility studies at the full capability level of the Corps of Engineers.

PARKER LAKE, OKLAHOMA

Parker Lake, on Muddy Boggy Creek, Oklahoma, is an early action project recommended in the Red River Below Denison Dam Comprehensive Basin Study.

The project would provide protection against the standard project flood and a dependable water supply of 42 million gallons per day for municipal industrial facilities.

A report recommending the construction of the project was approved by the Office of the Secretary of the Army and transmitted to the Water Resources

Council on 15 January 1981. The report was returned to the Office of the Secretary of the Army in October 1981 as a result of the Water Resources Council being discontinued.

Funding of $715,000 was received for Continuation of Planning and Engineering work on Parker Lake in FY85. Legislation to authorize construction of Parker Lake was approved in 98 HR 3678, and was included in 98S1739. Authorization is now pending in 99HR6 and 99S366.

The Red River Valley Association understands that the Oklahoma Water Resources Board has identified Parker Lake as its number one priority in the category of Continuation of Planning and Engineering. The Association requests that Congress authorize continuation of Parker Lake; that appropriations be made in FY86 for Continuation of Planning and Engineering at 100% Federal cost for the full capability of the Corps of Engineers; and that upon authorization, that appropriation of funds for construction be made in a Supplemental Appropriation Bill to enable construction to begin in FY86.

SARDIS LAKE, OKLAHOMA

Sardis Lake is located at mile 2.8 on Jackfork Creek, a tributary of the Kiamichi River, about 3 miles north of Clayton. The lake was authorized in the Flood Control Act of 1962 for the purposes of flood control, water supply and recreation. Construction began in 1975. Impoundment of Jackfork Creek behind the structure occurred with the official gate closing in January 1983. The Dam and Lake were officially dedicated in June 1983.

As authorized, the recreation areas at Sardis Lake were to be fully Federally funded. Unscheduled recreation facilities estimated to cost $2,400,000 remain unconstructed.

The Red River Valley Association strongly recommends Congress to appropriate the remaining funds in accordance with Corps of Engineers full capability to complete the recreation development at Sardis Lake to provide the benefits as originally planned and authorized, at full federal expense.

The Association understands that 98HR 3678 as adopted "...authorized and directed the Secretary to plan, design, and construct access road improvements to the existing road from the west end of Sardis Lake to Daisy, Oklahoma, at full Federal expense and at an estimated cost of $10,000,000. Non-Federal interest shall operate and maintain facilities at their own expense." ... and tht similar language was included in the continuing resolution making continuing appropriations for the FY 85 as adopted by both the House and Senate.

The Association also understands that the 1985 Energy and Water Development Appropriations Bill incuded $5,750,000 for construction of this road subject to authorization.

The Association hereby request that Congress authorize construction of this road at the earliest possible date to enable construction to begin within FY 85.

McGEE CREEK LAKE, OKLAHOMA

McGee Creek Lake was authorized for construction, operation, and maintenance in accordance with Federal Reclamation Laws by Public Law 94-123 September 28, 1976. McGee Creek Lake is located in Atoka County in southeastern Oklahoma. McGee Creek is a northern tributary of the Red River. The damsite is about 3.4 miles above the confluence of McGee and Muddy Boggy Creeks. The project was authorized for water supply, flood control, and recreation. Construction began on the project in June 1982.

The FY84 Energy and Water Development Appropriations Bill provided $1,900,000 for the continued construction of the McGee Creek Project. The Red River Valley Association strongly supports continuation of this project and

the concept demonstrated by the project of maximum development of the local economy by maximum utilization of opportunities provided by the project's development. The Association recommends the members of the McGee Creek Authority which are located outside of the Red River Basin to continue to cooperate with the basin interests to fully develop the economic potential of this project to the project area.

The Red River Valley Association requests that Congress appropriate necessary funds to the Bureau of Reclamation to continue the construction of this project in accordance with the Bureau's full capability in FY86.

TEXAS RESOLUTIONS

CYPRESS BASIN

A feasibility study of the Cypress Basin to include an investigation of the proposed Lake Marshall was authorized and funded by Resolution of the committee of Public Works and Transportation, May 9, 1979. The investigation is underway, and sufficient funding is needed to accomplish the study in a timely manner. The Association supports an appropriation of the capability of the Corps of Engineers in this endeavor.

COOPER LAKE AND CHANNELS

The Cooper Lake and Channels project was authorized by the 84th Congress on August 3, 1955 for the construction, control, recreation, and water supply benefits to the citizens of this nation. The Corps of Engineers, with three local entities, Sulphur River Municipal Water Districts, North Texas Municipal Water District and the City of Irving, have been attempting to build this project since authorization. The project has been delayed since 1978 by litigation to modify the Environmental Impact Statement. That litigation has now been resolved.

The Corps of Engineers made what it considers to be the required modifications on the Cooper Lake Project, which is desperately needed by the local participants for water supply, and by the City of Texarkana for replacement flood control storage in Lake Wright Patman. The Red River Valley Association recommends the Congress to continue funding the project in FY86.

LAKE WICHITA - HOLLIDAY CREEK - MCGRATH CREEK PROJECT WICHITA FALLS, TEXAS

The Army Corps of Engineers is currently designing a new dam to replace the unsafe dam on Lake Wichita, and to widen and realign the channel of Holliday Creek. Additionally, feasibility studies of McGrath Creek flood control improvements are scheduled for completion by the Corps of Engineers in FY85. These projects will stop the periodic and frequent flooding that cause millions of dollars damage each year to the largest city on the north central Texas plains, Wichita Falls, Texas.

Congress has approved funds in FY85 to complete the design work for Lake Wichita-Holliday Creek; however, final design and construction cannot begin until Congress authorizes the project.

The City of Wichita Falls is one of the few communities that has agreed to pay the non-Federal share of the costs for the project consistent with Administration's proposed policy, a positive indication of the importance of this project to the citizenry. The City has cleared the existing creek channel and is actively planning the relocation of bridges and utilities to facilitate final construction. The City will also acquire all right-of-way and drainage easements.

The Red River Valley Association strongly encourages the Congress to authorize the Lake Wichita - Holliday Creek - McGrath Creek project. Since construction will require four years, the Association recommends authorization

and appropriation of initial construction funds by FY86 so that the project can be completed by 1990.

BIG PINE LAKE, TEXAS

The Big Pine Lake, Texas, project was authorized by the Flood Control Act of 1962. The project is ready for construction and the completed preconstruction planning work has provided for a balance of environmental preservation with economic development among the project's water supply, flood control, recreation, and fish and wildlife purposes. The supply of water from this project is necessary and essential to the life and livelihood of every citizen of our area. The Red River Valley Association urges swift approval of the preconstruction plan so that work may proceed on this important project.

RED RIVER ABOVE DENISON-PEASE RIVER-CROWELL SITE

A more detailed feasibility report must be prepared on the proposed Crowell Site on the main stem of the Pease River, to take into account more realistic values of all benefits. This investigation should be started at once since this portion of the Red River Basin is particularly short of usable water for municipal, industrial and agricultural uses. Additionally, this reservoir would be very valuable as a flood control project.

Within a few years, with the control of natural pollution as proposed by the Corps of Engineers Ark-Red Chloride Control Program, this water can be used for irrigation purposes and other purposes mentioned above, and it is now time that the necessary report and feasibility study on this proposed site be started.

This proposed project has been endorsed and is supported by Wilbarger, Foard, Hardeman, Cottle and Childress Counties, and Soil Conservation District serving the above counties and the Cities of Vernon, Quanah, Childress, Crowell, and Paducah; and the Four Winds Foundation, consisting of Childress, Cottle, Hardeman, and Foard Counties, and Four Winds RD&D and many farm and civic organizations.

The Red River Valley Association supports the Pease River Reservoir Steering Committee in its request, and recommends the Corps of Engineers to expedite its efforts to develop a plan of improvement for the area.

NEW BONHAM RESERVOIR

The North Texas Municipal Water District and Red River Authority of Texas are developing the New Bonham Reservoir to be located in Fannin County, Texas. The New Bonham Reservoir will provide potable water supply and recreational benefits to a large number of citizens in Texas. During this period of increasing federal deficits and more requests for federal funding, the New Bonham Reservoir will be constructed without any financial assistance from the federal government. All funding for the project will be provided by the North Texas Municipal Water District and Red River Authority of Texas.

The Red River Valley Association supports the timely development of the New Bonham Reservoir and requests the federal government recognize this positive effort by assistance in acquisition of all required federal permits related to the project in a timely and expeditious manner.

COST OF STORAGE FOR MUNICIPAL AND INDUSTRIAL WATER

Federal laws under which the multi-purpose Federal water projects were authorized, require purchases of any water supply or power to repay the Federal Government the full cost of providing such power or water, including interest on that cost at a rate the government paid to borrow long-term money in the year it built the project. This specific pricing mandate was established by the Water Supply Act of 1958.

Since 1976, the Secretary of Army has required constructions costs escalated to preset day levels by use of the Engineering News Record Cosntruction Index effective at the beginning of this fiscal year in which the contract is approved plus interest.

The Red River Valley Association request Congress clarify the Secretary of Army's authority regarding water storage contracts and supports the concept of repayment to the Federal Government of original cost of construction plus interest only.

Senator STENNIS. If you could stay here for a little while right now, especially those two. This is not cutting you off or anything like that. I hope you fully understand. It is just a matter of making the best we can of this situation.

ADDITIONAL PREPARED STATEMENTS SUBMITTED FOR THE RECORD

In addition to the Red River statements, we have those from the Red-Ark Development Authority and the Port of New Orleans, Mr. Herbert Haar, which will also be incorporated.

[The statements follow:]

Statement of the RedArk Development Authority, East Central Water Association, Poteau/Deep Fork Association, and the Oklahoma Delegation of the Red River Valley Association

TESTIMONY ATTENDEES

NAME	REPRESENTING*	PROFESSION
1. Harvey Bollinger	RedArk	Exec.Dir., RedArk, McAlester, OK
2. Carol Tevepaugh	RedArk	Proj.Mgr., TVA, Knoxville, TN
3. Joe Taron	ECWA	Dentist, Shawnee, OK
4. Ron Bourbeau	ECWA	City Manager, Shawnee, OK
5. Jim Bradshaw	ECWA	City of Shawnee, Shawnee, OK
6. Leonard Briley	ECWA	City Manager, Ada, OK
7. Mamie Farnham	ECWA	Sec., Ind. Dev. Corp, Ada, OK
8. Wayne Manley	ECWA	Exec. Dir., Central OK Econ. Dev. Dist., Shawnee, OK
9. Leodus Banks	ECWA	Mayor, Wewoka, OK
10. Gary Ainsworth	RR	Proj. Dir., McGee Creek Rural Demo Proj., Atoka, OK
11. Bill Chapman	RR	Attorney at Law, Ardmore, OK
12. Margaret Bollinger	RR	Vice Pres., American State Bank, Broken Bow, OK
13. Bill Clifford	RR	Exec. Dir., So. Okla. Dev. Assoc. Ardmore, OK
14. Jim Monroe	RR	Editor & Pub., McCurtain County Gazette, Idabel, OK
15. Bob Mace	RR	Manager, Choctaw Elect. Coop Hugo, OK
16. Lonnie Davis	P/DFA	Mayor, Stigler, OK
17. Robert Bain	P/DFA	Asst. Dir., Kiamichi Econ, Dev. Dist. of Ok, Wilburton, OK
18. Tony Kaai	P/DFA	Pres., Central Chapter of the Soil Cons. Society of America Edmond, OK

*

RedArk	RedArk Development Authority
ECWA	East Central Water Association
RR	Oklahoma Delegation of Red River Valley Association
P/DFA	Poteau/Deep Fork Association

TESTIMONY SUMMARY

Project	Required Action by Committee
1. Non-Federal Cost Sharing	Continue Committee Policy
2. Omnibus Water Legislation	Pass in 99th Congress with Supplemental Appropriation Bill
3. Parker Lake, Oklahoma	Full Corps capability for CP&E at 100% Federal Cost Supplemental Appropriation with Authorization for Construction
4. East Central Oklahoma Water Supply Study	Full Bureau capability at 100% Federal Cost
5. North Deer Creek Watershed	New Construction start in FY86
6. Arkansas River & Tributaries, South Central & Southeast Areas of Oklahoma Comprehensive Study	Full Corps capability at 100% Federal cost for feasibility study

7. Arcadia Lake, Oklahoma	Additional funds for Treatment & Transmission facilities and continued construction funds for lake at full Corps capability
8. Canadian River and Tributaries	Fund Corps at full capability at 100% Federal cost for feasibility study
9. Red River Comprehensive Study	Full Corps capability at 100% Federal cost for feasibility study
10. Hugo Lake, OKlahoma	Continue funds for study at full Corps capability and 100% Federal cost
11. Pine Creek, Oklahoma	Continue funds for study at full Corps capability and 100% Federal cost
12. Lukfata Project, Oklahoma	Continue funds for study at full Corps capability and 100% Federal cost
13. Rush Creek Interim Study	Fund feasibility study at full Corps capability and 100% Federal cost
14. Sardis Lake, Oklahoma	Complete recreation facilities as authorized at 100% Federal cost
15. McGee Creek, Oklahoma	Continue full Bureau capability for construction

REDARK DEVELOPMENT AUTHORITY TESTIMONY

Mr. Chairman, I want to express our appreciation for this opportunity to meet with this committee to discuss what we consider the most crucial question facing our nation, "how do we develop our nation's water resources in order to avoid a national water crisis?" We consider it an honor and a privilege to testify before this committee because we feel that without a strong multi-purpose national water development program, many of the other important aspects of our country's future, including the nation's defense program are really being built on an very unstable foundation. We also consider it a responsibility to work with you and the committee.

The RedArk Development Authority (RedArk) is a public trust established under the laws of the State of Oklahoma for a 21-county area of east central and southeast Oklahoma. The name RedArk is derived from the fact that the area lies immediately between two major water resources, the Red and the Arkansas Rivers. The purpose of RedArk is to undertake the maximum potential development of the area's water and natural resources with the objective of obtaining the maximum potential economic and employment benefits for the people of that area. With this purpose in mind, RedArk is vitally cocncerned with the development of not only what we consider our area's most vital resource, but also the most vital resource of our great nation--WATER.

East Central and Southeastern Oklahoma is rich in water and natural resources, but this area of Oklahoma has lagged far behind the state and the Nation in capitalizing the untapped potential of its natural resource base. The economic and job

development potential of these resources has not as yet been of significant benefit to the people of the project area.

When one looks at the RedArk area and the poor economic and employment conditions that exist, and yet realizes the area is rich in water and natural resources, one has to come to the conclusion that there's no justifiable reason for the situation to exist. It is a realization of this untapped potential that makes it not only a privilege for us to appear before you to testify about water development in this area, but it actually becomes a mandate to do so.

To achieve its principal purpose, RedArk has initiated a comprehensive, multi-purpose, water resource development program. This program includes hydropower development, water supply, recreation, flood control, and water quality activities. In our role as a planning and implementing authority, RedArk works closely with the three citizens water associations in our area: East Central Water Association, Poteau/Deep Fork Association, and the Oklahoma Delegation of the Red River Valley Association.

With me today are representatives from each of these three water associations. A list of attendees is attached to this testimony for the record. However, before I turn to them to make short comments about specific needs of their individual area I would like to draw your attention to certain items which are of general importance to the entire RedArk area and are specific concerns which I have.

The first of these is in the area of water resource development. Our country is facing a crisis which will make our energy crisis appear to be insignificant. Our country is facing a water crisis. We do not have a national water policy. The lack of such a water policy is leading our country toward a national water crisis.

Water is involved in all aspects of our daily lives. It is a part which sustains life itself. We drink it, we wash in it, we grow our food with it, we clean and process our food with it, we dispose of our waste with it, and you can go on and on. You can't get away from the importance of water in anything that we do. With all of our advanced technology, with all of our great scientific expertise, we have never been able to find anything that we can substitute for water. We talk about economic recovery programs, and we talk about our national defense program. Mr. Chairman, I ask you to consider for just a few minutes where is the econommic recovery program going to be and where is the national defense program going to be if we don't have water. If we don't have a national water resource development program, where are we going to get the water supply to meet the needs of industry and to meet the needs of our country during a miltary emergency? Where are we going to get the water delivery systems that can provide a country with clean, fresh, pure, potable water that protects our health and provides us with the ability to produce and to process our goods for distribution all over this planet.

The current Administration's policies and proposed budget for water resource development is not only going to destroy the water resource program of the entire nation, but it is particularly going to destroy that program in rural areas such as ours. These policies and budget proposals will speed up our pace of arriving at a national water crisis.

The Administration says we simply want you to cost share in water resource projects. Well, let's talk about cost sharing for a minute. Is cost sharing a new concept? No, we have had cost

sharing for a long time. In fact, most of the Corps of Engineers and Bureau of Reclamation's water projects are heavily cost shared. Almost all of the project cost of these projects is repaid to the Federal Treasury, with interest, over a 50-year time period (the life of the project). An example of the cost sharing that we've been participating in for years is the McGee Creek Project, a Bureau of Reclamation project currently under construction within 60 miles of McAlester. Eighty-seven percent (87%) of this project's total cost will be paid back to the Federal Government with interest. So there is nothing new about the fact that we're sharing in the cost. Water projects to the Bureau and the Corps are not grant programs.

Okay, we've always had cost-sharing. What is the real question? The real question is just when and how much. The Administration wants "100 percent" of the cost on hydropowerr and municipal and industrial water supplies to be provided "upfront" by non-federal entities. On navigation projects it wants 75 percent upfront, on recreation projects it wants 50 percent upfront, and on flood control it wants 35 percent upfront. Upfront, that means before the project ever starts. If I can afford to finance the project 100 percent upfront, then frankly I don't need the Federal Government's help in this project. I wouldn't want them to get in my way. But what if I can't afford to finance the project, and yet I still have a resource that needs to be developed, I still have a resource that can provide a positive input to strengthening our country as a whole. Yes, it's probably going to strengthen my particiular area. But then that's how you strengthen the whole, you strengthen the parts. Our national water policy needs to be based on this concept...that we're going to look at our nation's water resources and to develop those water resources in the best interest of our nation as a whole. We are going to do that by developing the water resources that are beneficial to our nation from each area of our area, irrespective of whether that area has the ability to finance that development on its own.

The policies and budget proposals by this Administration are 180 degrees in the opposite direction. They're saying, we are not going to put any new water projects in the budget unless you come up with our upfront cost-sharing packages. We only want to help those areas that can frankly already help themselves. What does this create in our country? POLARIZATION. It creates the haves against the have nots, the big against the little, the project that has the money against the project that does not have money. Or simply put, them that got GETS and them that don't DON'T. That's the type of polarization that our nation cannot really afford.

Rural America is a key to the vital water resources of our nation. The great water supplies don't exist in the urban areas; they exist in Rural America. Rural America doesn't have the big tax basis, the large bonding capacities to finance these projects on their own. Lets talk about a specific area. Twenty-one counties of RedArk. The RedArk area is a part of Rural America. Only two of our 21 counties have a population greater than 50,000. It is an area that has experienced a continual outmigration of its people, especially its young people. We've done an excellent job of encouraging our young people to seek a higher education, but unfortunately, having done so without the ability to find jobs back home then they must leave the area. For instance, in 12 of the 21 counties, population peaked in the 1920 census. Three of the 21 counties peaked in the 1930 census, four of the 21 counties peaked in the 1940 census. Or in other

words, 19 of the 21 counties population peak was prior to 1940. Currently, six of the 21 counties has lost over 45 percent of its peak population. One county, Coal county, has lost 57 percent of its peak population. This is the comparison of its 1980 census population to its peak. The 1984 annual average unemployment rate for the United States was 7.5 percent. At the same time, Oklahoma's average was 7.1 percent. The average for the 21 counties was 8.7 percent. Eighteen of the 21 counties' unemployment for the 1984 annual average was greater than the U.S. Eleven of those counties had an average unemployment for that year greater than 10 percent, and three unemployment greater than 15 percent. Pushmataha County, 1984 average annual unemployment was 16.6 percent. The 1980 per capita income in the United States was $7,298. In Oklahoma, the average per capita income was $6,858. All 21 counties', of the RedArk area, per capita income was below the state and national average. Johnson County had the lowest per capita income of $4,227 with Atoka County having only $4,356. In the United States, families below the poverty level account for nine percent of the total. In Oklahoma, they account for 10 percent of the total. In the 21 county area, 19 of the counties have a higher percentage of families below the poverty level than the State of Oklahoma's 10 percent. Six counties have greater than 20 percent of the families below poverty level. Johnston County has 25 percent of families below the poverty level. In the United States, seven percent of the households receive public assistance. This is the same number of percentage as exists in Oklahoma. In the RedArk area, 19 counties have a higher percentage of households receiving public assistance than the state and national rate. Nine of these counties have above 14 percent of their households receiving public assistance.

Now, I ask you can an area that has this type of social and economic conditions provide the upfront financing to develop the water resources that are important to not only that area but the entire nation. But remember, we're not asking for a grant, we're not asking for a handout, we are simply asking for a policy and a program that provides us an opportunity to finance these projects.

The Administration has refused to include new water projects in its budget, unless non-federal sponsors agree to these cost-sharing policies based on the upfront concept. This is done irrespective of the fact that Congress has never authorized a change in the cost-sharing structure of water resource projects. I applaud the committees which have held firm in providig necessary authorization and funds to continue to develop our nation's water resources based on need not ability to pay, and who have agreed to the Administration's upfront cost-sharing program. Water projects are the only projects on a federal level that must go through a rigorious benefit to cost ratio analysis. Under the Administration's upfront cost sharing policy, projects are going to be included in his budget which may only have a benefit cost ratio of 1.01 to 1.00, if they agree and have the ability to provide the upfront cost sharing while projects that might have a 2.0 to 1.0 benefit to cost ratio will be left out of the budget because the local area does not have the financial ability to provide the upfront cost sharing. Now, I ask you. Is that the optimal development of our nation's water resources for the benefit of our nation as a whole.

As I mentioned before, there are certain areas of concern to all three of the water associations. Each association has therefore adopted certain resolutions regarding these activities. The following resolutions are examples of areas of mutual concern and were adopted by all three associations, independently. The following resolutions have been adopted individually by all three

of the associations; East Central Water Association, Poteau Deep Fork Association, Oklahoma Delegation of the Red River Valley Association. In these resolutions, the term association will apply to all three.

RESOLUTION A

NON-FEDERAL COST SHARING

The President of the United States and the Office of Management and Budget have directed the Department of the Army's Corps of Engineers to obtain cost-sharing agreements with non-federal sponsors for (1) 50 percent of the total cost of the feasibility phase of studies conducted by the Corps and for (2) up-front financing of the construction cost in the following amounts: 100 percent of the municipal and industrial water supply cost, 100 percent of the hydropower cost, 75 percent of navigation cost, 50 percent of the flood control cost. Unless such agreements are obtained between the Corps and non-federal sponsors on a new project, the President and Office of Management and Budget have refused to include the project as a new start in the budget; although these cost-sharing requirements have never been approved by Congress and differ greatly from current cost-sharing requirements enacted by previous legislation.

The Associations believe that the application of these unauthorized cost-sharing requirements by the Administration is improper. The Associations believe that such up-front cost-sharing requirements as those being implemented by the Administration are inappropriate and contrary to the national interest in the development of our nations' most vital national resource, our water. We are convinced that the long term impact of such requirements will be devastating to water resources development in our country and will accelerate a national water crisis.

Therefore, the Associations request that Congress (1) recognize the existing danger of a national water crisis and take all actions necessary to avoid such a crisis; (2) establish a national water policy whiuch recognizes the immportance of water in the development of all aspects of our economy; (3) develop a cost-sharing program which will encourage the development of the water resources in all areas of our country, not just in those parts of the nation which can afford upfront financing; and (4) continue to resist pressure from the Administration to give a higher priority to projects whose sponsors have agreed to the Administration's cost-sharing requirements, and continue to authorize projects and appropriate funds based only on policies which have been enacted by Congress and signed into law by the President.

RESOLUTION B

OMNIBUS WATER LEGISLATION

The Associations urge the United States Senate and House of Representatives to approve omnibus water legislation that would benefit the nation through the proper developmment and managemment of the water resources of America.

Therefore, the Associations urge the Congress to give prompt and favorable consideration to an Omnibus water bill during the 99th Congress.

EAST CENTRAL WATER ASSOCIATION TESTIMONY

The East Central Water Association is a voluntary group of citizens banded together in the interest of supporting water development projects and other natural resource development in the east central counties of Oklahoma. The ECWA promotes the orderly development of the area water and natural resources to advance the economic development and future wellbeing of the citizens of the five-county area. These Oklahoma counties are: Coal, Hughes, Pontotoc, Pottawatomie and Seminole.

The five counties which comprise the East Central area have a combined population as in the 1980 census of approximately 134,000 people. This five-county area is the most rapidly growing area in southeastern Oklahoma. It is an area which is not only experiencing significant population growth, but also major expansion in the manufacturing and industrial sectors. Cities in these east central counties, such as Ada, Shawnee, Tecumseh, Seiminole, Wewoka, Coalgate and Holdenville, are in extreme need of an adequate municipal and industrial water supply. However, at this time, there are no existing, under construction or authorized Corps of Engineers or Bureau of Reclamation lakes within the east central area. In fact, there are not any lakes within the area which have a significant water supply storage capability. Water rationing has been an regular occurence over the past several summers for nearly all the communities within this area. This critical need for future water supply is clearly demonstrated by the competition for the municipal and industrial water supply storage to be provided by the proposed Parker Lake located in the northern part of Coal County. Although this lake has not even been authorized, applications for water rights already exceed by 10 times the amount of water which will be available from the lake.

The East Crentral Water Association has adopted resolutions specific to projects in their area, and these resolutions follow. Specific testimony given by individual representatives from the East Central Water Association will be attached at the conclusion of the testimony and resolution section of the three water associations.

RESOLUTION C
PARKER LAKE, OKLAHOMA

Parker Lake, on Muddy Boggy Creek, Oklahoma, is an early action project recommended in the Red River Below Denison Dam Comprehensive Basin Study.

The project would provide protection against the standard project flood and a dependable water supply of 42 million gallons per day for muicipal industrial facilities.

A report recommending the construction of the project was approved by the Office of the Secretary of the Army and transmitted to the Water Resources Council on 15 January 1981. The report was returned to the Office of the Secretary of the Army in October 1981 as a result of the Water Resources Council being discontinued.

Funding of $175,000 was received for Continuation of Planning and Engineering work on Parker Lake in FY 1985. Legislation to authorize construction of Parker Lake was approved in 98 HR 3678, and was included in 98 S 1739. Authorization is now pending in 99 HR 6 and 99 S 366.

The East Central Water Association understands that the Oklahoma Water Resources Board has identified Parker Lake as its number one priority in the cateogry of Continuation of Planning

and Engineering. The ECWA requests that Congress authorize construction of Parker Lake to secure the present and future needs of the five-county East Central Water Association area; that appropriations be made in Fy 86 for Continuation of Planning and Engineering at 100 percent Federal cost for the full capability of the Corps of Engineers; and that upon authorization, that appropriation of funds for construction be made in a Supplemental Appropriation Bill to enable construction to begin in FY 1986.

RESOLUTION D

EAST CENTRAL OKLAHOMA WATER SUPPLY STUDY

The Bureu of Reclamation's East Central Oklahoma Water Supply Study is to investigate in the development of the water and related land resources in all or parts of Coal, Hughes, Lincoln, Okfuskee, Pontotoc, Pottawatomie, and Seminole Counties, including areas in adjacent counties. This is an area of Oklahoma in which there are no existing, under construction, or authorized Corps of Engineers or Bureau of Reclamation lakes. In fact there are no lakes with a significant water supply storage capabilitly in the area. However, cities in these counties such as Ada, Shawnnee, Tecumseh, Seminole, Wewoka, Coalgate and Holdenville are in extreme need of an adequate municipal and industrial water supply. Water rationing has been a regular occurrence over the past several summers. This critical need for future water supply is clearly demonstrated by the competition for the municpal-industrial water supply storage to be provided by the proposed Parker Lake located in the northern part of Coal County. Although this lake has not even been authorized, already applications for water rights exceed by 10 times the amount of water that will be available from the lake.

The East Central Water Association (ECWA) is aware that the 1985 Energy and Water Appropriation Bill provided $200,000 for the Bureau of Reclamation to begin this study and directed the Bureau to coordinate closely with other Federal and State agencies to avoid any duplication of effort.

The ECWA strongly supports this study effort and requests that Congress appropriate funds equivalent to the Bureau of Reclamation's full capability to continue this study at 100 percent Federal cost.

RESOLUTION E

NORTH DEER CREEK WATERSHED

The Soil Conservation Service has completed the Watershed Plan and Environmental Impact Statement for the North Deer Creek Watershed. This document describes a plan to reduce the effects of erosion sediment, and flood damages. The plan proposes a multiple-purpose structure designed for flood prevention, municipal water supply, and water-based recreation. Eocnomic benefits of the recommended plan exceed the cost of the project. The major impacts consist of reducted flooding, sediment, and erosion damages; increased prime farmland; and increased municipal water supplies and recreational opportunities.

The project plan was prepared under the authority of the Watershed Protection and Flood Prevention Act, P.L. 83-566 as amended. The project plan has been submitted to the Washington office of the USDA-SCS.

The East Central Water Association (ECWA) strongly supports this project and urges prompt approval of this plan by the

Washington office of USDA-SCS and the Office of Management and Budget (OMB). The ECWA requests that both the House Committee on Public Works and Transportation and the Senate Committee on Environment and Public Works authorize the project and that it be included as a new construction start in the budget for FY 1986

POTEAU/DEEP FORK ASSOCIATION TESTIMONY

The Poteau/Deep Fork Association (P/DFA) is a voluntary citizens' group interested in supporting water development projects and other natural resource development in the 10 counties of Oklahoma impacted by the Poteau and Deep Fork Rivers. The P/DFA was formed for the purpose of promoting the orderly development of the water and natural resources in these two river basins.

The Deep Fork river is a tributary of the Canadian River; forms one of the major arms of Lake Eufaula, an existing COE multi-purpose project, and ultimately empties into the existing McClellan-Kerr navigation channel on the Arkansas River.

The Poteau drains in an area of about 1900 square miles eastern Oklahoma and western Arkansas. The drainage basin, which is about 1.2 percent of the drainage area of the Arkansas River, is roughly rectangular in shape and is mountainous. There are approximately three billion tons of coal reserves located in the basin and they are being mined at an increasing rate. In addition, approximately one million bushels of soybeans are produced each year in the area.

Navigation on Deep Fork River is not a new concept. It was championed in the latter 1950s by the late Senator Robert S. Kerr as a original part of the McClellan-Kerr Navigation System to serve the major industrial center of Oklahoma City and the vast agricultural grain industry of western Oklahoma and the Texas panhandle. A report showing the project to be economically feasible was forwarded by the Tulsa District to the southwest division and hence to the Office of Chief of Engineers in the early 1960s. Unfortunately, the Board of Engineers for rivers and harbours rejected the report on the grounds that Tulsa District had over estimated shipments of petroleum products and coal that would be carried by the waterway. The project was then dropped. It is important to note that although this project did show an economic feasibility at one time, it was a single purpose (navigation) project.

The Oklahoma water resources board recently completed a state water plan which included a project to transfer excess flood waters from the Robert S. Kerr Lake, a part of the existing navigation channel on the Arkansas River, the water deficient areas in metropolitian Oklahoma City and the tremendously productive agricultural areas of the high plains of Oklahoma. The ariculture of this area is heavily depended upon irrigation and is in jeopardy because of the eight-state ogallala ground water aquafer. Although technically feasible, the project did not prove economically feasible under current conditions and evaluation criteria. This plan called for water to be transported by non-navigation canals, fish stations and aqua ducks along a route closely paralleling the proposed navigation route along the Deep fork River. Again, this project was designed and evaluated as a single purpose project (water

supply) To maximize the potential of this water resource, we must quit looking at it as single purpose projects and consider it from a multi-purpose standpoint. This multi-purpose approach would include ways of combining navigation and water supply plans as well as other purposes such as hydropower, recreation and flood control.

This is the major effort being looked at in what we call the Poteau/Deep Fork Comprehensive Study. The following resolution deals specifically with this study. The resolutions that follow are also resolutions regarding specific projects of interest to the Poteau/Deep Fork Association.

RESOLUTION F

POTEAU/DEEP FORK COMPREHENSIVE STUDY, OKLAHOMA

The Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive Study (authorized by Public Law 98-63, 30 July, 1983) was initiated in October 1983. A reconnaissance report is scheduled for completion in March 1985. The comprehensive study will recommend measures for: flood control; development of water supply, treatment and conveyance facilities; generation of hydroelectric power; development and enhancement of the recreational potentials and enterprises of the region; and improvement of the rivers for navigation and port site development.

The P/DFA is aware that Congress in the 1985 Energy and Water Development Appropriations Bill (P.L. 98-866) enacted specific language regarding feasibilility level studies on this project,..."Therefore an additional $100,000 is included in the bill to begin the feasibility-level studies at full Federal expense. Lacking authority to require non-federal cost-sharing, the Corps is directed to continue and complete these studies at full Federal expense."...The P/DFA agrees with the position Congress has taken regarding cost-sharing on this project.

The P/DFA strongly supports continued funding of this study and requests Congress to appropriate full Corps of Engineers capability level funds for feasibility studies at 100 percent Federal cost.

RESOLUTION G

ARCADIA LAKE, OKLAHOMA

Arcadia Lake is located at mile 213.8 on the Deep Fork River in the mmetropolitan area of Oklahoma City and Edmond, Oklahoma, about 1 and 1/2 miles west of Arcadia, Oklahoma. Arcadia Lake was authorized by the Flood Control Act of 1970 for the purposes of flood control, water supply and recreation.

Construction on the COE lake began in September 1980. The entire project is about 53 percent complete. The total estimated cost is $85.3 million. Impoundment is scheduled in March 1986 with the completion of the project scheduled for September 1987.

The City of Edmond, as a local sponsor, has signed contracts with the Corps to repay the cost of water supply and one-half the separable recreation costs. This equals to about 56 percent of the total project cost. This is another example of how well our current cost-sharing policies on water resource projects work. The City of Edmond wants to add the construction of water treatment and transmission facilities as an authorized project feature. These facilities were introduced for

authorization in the proposed Omnibus legislation, 99 HR 6. Under this authorization non-federal interest would pay 20 percent upfront and 80 percent payback. The interest rate would be the rate existing under the water supply storage contract, 7.21 percent. Estimated cost is $12 million.

The P/DFA wants to go on record as being a strong supporter of the continued funding for the construction of the Lake Arcadia project and the additional funding for the water treatment and transmission facilities upon their authorization. We therefore request that this Committee appropriate necessary funds to the Corps to continue the construction of this project in accordance with the full capabilities as expressed for FY 1985. The P/DFA also congratulates the Corps for completing this lake in relatively short order from just funding at a cost below the authorized ceiling.

RESOLUTION H

CANADIAN RIVER AND TRIBUTARIES

The Canadian River and Tributaries Study was authorized by the flood Control Act of 1937 (PL75-406); PL79-525; Senate Committee Resolutions of 1944, 1949, and 1976, and House Committee Resolutions of 1944, 1950 and 1976. The Deep Fork River, with a drainage area of 2,548 square miles, is a major tributary of the Canadian River.

The Corps, with funds included in the Fy 85 Energy and Water Appropriations Bill, initiated studies in cooperation with the SCS on the flood control and drainage problems of the Deep Fork River. The Corps study included the development of alternatives for channel improvement measures along the main stem of the river. The SCS is continuing the development of the upstream watershed structures that would complement the flood protection afforded by implementable plans along the main stem. This project represents an excellent example of the coordinated use of the resources of two federal water agencies to address a significant, and at times, life-threatening problem for those people who live along the Deep fork River.

The Tulsa Division of the Corps of Engineers has completed a reconnaissance study of the Deep Fork River portion of the Canadian River study. This reconnaissance report is now under review at the Southwest Division headquarters.

The P/DFA is aware of and concerned about the flooding and drainage problems in the Deep Fork Basin, which manifested itself again this year. The Association strongly urges the Corps to begin and complete as soon as possible and at full Federal expense the feasibilitly study on these flood and drainage problems.

OKLAHOMA DELEGATION--RED RIVER VALLEY ASSOCIATION

Mr. Chairman, 12 of the 21 counties in the RedArk area lie within the Red River Basin. Therefore, we are strong supporters of the Red River Valley Association. This Association is a 60 year old voluntary group of citizens banded together to advance the economic development and future well being of the four-state Red River Basin area. We, as the Oklahoma Delegation, represent one of the four states. We would like to add a hearty second to the testimony which you have received from the full Red River Valley Association. The following are resolutions which have been adopted by the Oklahoma Delegation regarding projects of particular interest to Oklahoma.

RESOLUTION I

RED RIVER BASIN ARKANSAS, TEXAS, LOUISIANA, AND OKLAHOMA - COMPREHENSIVE STUDY

The Red River Basin Comprehensive Study (authorized by Public Law 98-63, 30 July 1983) was initiated in October 1983. A reconnaissance report is scheduled for completion in March 1985. The comprehensive study will recommend measures for flood control; development of water supply, treatment and conveyance facilities; generation of hydroelectric power; development and enhancement of the recreational potentials and enterprises of the region; and improvement of the rivers for navigation and port site development.

The Association is aware that Congress in the 1985 Energy and Water Development Appropriations bill (P.L. 98-866) enacted specific language regarding feasibility level studies on this project..."Therefore, an additional $200,000 is included in the bill to begin the feasibility-level studies at full Federal expense. Lacking authority to require non-Federal cost-sharing, the Corps is directed to continue and ocmplete these studies at full Federal expense."...The Red River Valley Association agrees with the position Congress has taken regarding cost-sharing on this project.

The Association strongly supports continued funding of this study and requests Congress to appropriate full Corps of Engineers capability level funds for feasibilityl studies at 100 percent Federal cost.

RESOLUTION J

HUGO LAKE, KIAMICHI RIVER, OKLAHOMA

Hugo Lake was authorized by the Flood Control Act of 11946 for the purposes of flood control, water supply, water quality, recreation, and fish and wildlife. Construction began in October 1967, and impoundment of the lake began in January 1974. The damsite is located at river mile 17.6 on the Kiamichi River about 7 miles east of Hugo, Oklahoma.

A study to determine the feasibility of adding hydropower facilities to the existing Hugo Lake project is beinq conducted under the authority of Section 216, Public Law 91-611, December 1970. Preliminary studies commpleted in October 1962 showed that a 15 mega-watt hydropower plant may be economically feasible and detailed feasibility studies are being continued. The Association recommends that the Corps of Engineers receive funds equivalent to their full capabilitly to ontinue this study at 100 percent Federal cost.

RESOLUTION K

PINE CREEK LAKE, PINE CREEK, OKLAHOMA

Pine Creek Lake was authorized by the Flood Control Act of 1958 for the purposes of flood control, water supply, water quality, and fish and wildlife. The damsite is located on the Little River about 5 miles northeast of Wright City, Oklahoma.

A study to determine the feasibility of adding hydropower facilities to the existing Pine Creek Lake project is being conducted under the authority of Section 216, Public Law 91-611, December 1970. Preliminary studies, completed in October 1982, showed that a 40 mega-watt hydropower plant may be economically feasible. Detailed feasibility studies are continuing and are

scheduled for completion in Fiscal Year 1986. The Association recommends that the Corps of Engineers receive full capability to continue this study at 100 percent Federal cost.

RESOLUTION L

LUKFATA PROJECT, OKLAHOMA

Lukfata Lake on Glover Creek in central McCurtain County in southeastern Oklahoma was authorized by the Flood Control Act of 1958 as a component of the six-reservior system for flood control in the Little River Basin. All of the reservoirs except Lukfata Lake have been completed. Without the Lukfata project, the system does not function as planned.

In the Energy and Water Development Appropriations Bill of 1982, HR 97-177, 14 July 1981, the committee on appropriations directed the Corps, within the limits of available funds, to study the potential of hydropower generation at Lukfata Lake.

A preliminary study was completed in May 1982. The study showed that a 65 mega-watt hydropower plant could be developed as a part of the project at the lower site. However, any development on Glover Creek could adversely affect a threatened species, the leopard darter, since the creek is listed as its critical habitat. Consultations between the Fish and Wildlife Service and the Tulsa District Corps of Engineers on mitigation of any adverse effects are being finalized in Fiscal Year 1985. If reports of the leopard darter in other streams in southeastern Oklahoma are accurate, then Glover Creek should be removed as a critical habitat. The Association supports continued studies of the Lufata project by the Corps of Engineers, at 100 percent Federal cost.

RESOLUTION M

RUSH CREEK INTERIM STUDY, OKLAHOMA

The Red River Valley Association, the Oklahoma Water Resources Board, and the City of Chickasha, Oklahoma, support the current interim study being conducted by the Corps of Engineers to assess the potential for water resources development in southcentral and southwestern Oklahoma. The current efforts are concentrated on seeking future water supply alternatives for the Chickasha area. It is anticipated that the reconnaissance study which is scheduled to be completed in Fiscal Year 1985, will identify a Federal interest in continuing this study. It is requested that 100 percent Federal afunds be appropriated in Fiscal Year 1986 to continue feasibility studies at the full capability level of the Corps of Engineers.

RESOLUTION N

SARDIS LAKE, OKLAHOMA

Saridis Lake is located at mile 2.8 on Jackfork Creek, a tributary of the Kiamichi River, about 3 miles north of Clayton. The lake was authorized in the Flood Control Act of 1962 for the purposes of flood control, water supply and recreation. Construction began in 1975. Impoundmment of Jackfork Creek behind the structure occurred with the official gate closing in January 1983. The Dam and Lake were officially dedicated in June 1983.

As authorized, the recreation areas at Sardis Lake were to be fully Federally funded. Unscheduled recreation facilities estimated to cost $2,40,0000 remain unconstructed.

The Association strongly recommends Congress to appropriate the remaining funds in accordance with Corps of Engineers full capability to complete the recreation development at Sardis Lake to provide the benefits as originally planned and authorized, at full federal expense

The Association understands that 99 HR 3678 as adopted " authorized and directed the Secretary to plan, design, and construct access road improvements to the existing road from the west end of Sardis Lake to Daisy, Oklahoma, at full Federal expense and at an estimated cost of $10,000,000 Non-federal interest shall operate and maintain facilities at their own expense " and that similar language was included in the continuing resolution mmaking continuing appropriations for the FY 1985 as adopted by both the House and Senate

The Association also understands that the 1985 Energy and Water Development Appropriations Bill included $5,750,000 for construction of ths road subject to authorization

The Association hereby request that Congress authorize (99 HR 6) construction of this road at the earliest possible date to enable construction to begin within Fiscal Year 1985

RESOLUTION O

McGEE CREEK LAKE, OKLAHOMA

McGee Creek Lake was authorized for construction, operation, and maintenance in accordance with Federal Reclamation LAws by Public Law 94-123 September 28, 1976. McGee Creek is located in Atoka County in southeastern Oklahoma. McGee Creek is a northern tirbutary of the Red River The damsite is about 3 4 miles above the confluence of MCGee and Muddy Boggy Creeks The project was authorized for water supply, flood control, and recreation Construction began on the project in June 1982.

The Fiscal Year 1985 Energy and Water Development Appropriations Bill provided $19,000,000 for the continued construction of the McGee Creek Project. The Association strongly supports continuation of this project and the concept demonstrated by the project of maximum development of the local economy by maximum utilization of opportunities provided by the project's development The Association recommends the members of the McGee Creek Authority which are located outside of the Red River Basin to continue to cooperate with the basin interests to fully develop the economic potential of this project to the project area

The Association requests that Congress appropriate necessary funds to the Bureau of Reclamation to continue the construction of this project in accordance with the Buureau's full capability in Fiscal Year 1986

STATEMENT OF MAMIE FARNHAM, SECRETARY, ADA INDUSTRIAL DEVELOPMENT CORP., OKLA

I have worked in economic development and economic planning for the past twenty-five years. My concern deals with development of our limited water resources that exist in Oklahoma. Water and jobs go together, provided there is an environment that encourages economic and industrial development. As an economic planner, I am aware that the entire state is healthier if you have growth that is distributed over a larger portion of the state, instead of metropolitan areas. Distrubution of industry and job opportunities would be materially assisted if water supply and distribution is developed and industrial parks established where the water is developed. A portion of the water impounded should be set aside for economic and industrial use. The Parker Reservoir, which is to be built in parts of Hughes, Coal, and Pontotoc Counties, will generate over forty million gallons of water a day. This structure is being built where a very nominal amount of industrial and economic development has taken place since statehood. A much better quality of life would be realized in this area--Hughes, Coal, and Pontotoc Counties--and greater contributions can be made by this area to the overall economy of our nation with the development of Parker Reservoir.

The City of Ada is designated as a growth center by the overall economic development plan of Southern Oklahoma Development Association (SODA) in order that jobs might be provided for Pontotoc, Hughes, and Coal Counties, where the highest unemployment rates exist in the state of Oklahoma. However, the City of Ada is at a standstill with respect to recruiting industry that might require a large use of water.

Presently, the City of Ada gets its water from a spring and wells from the Arbuckle formation, 13 miles south of Ada. However, our water rights in both the spring and the ground water are being challenged in the court system at this time. Unless we get a certain, stable source of water and water rights that would be provided by Parker Reservoir in the near future, our economic development will come to a complete halt. Therefore, we urge the funding for construction for Parker Reservoir and the continued funding of the East Central Oklahoma Water Supply Study to identify additional sources of water to meet the needs of this area. Presently, there has been filed with the Oklahoma Water Resources Board applications for nine (9) times the water rights that will be made available in Parker Reservoir.

STATEMENT OF TONY KAAI, PRESIDENT, CENTRAL OKLAHOMA CHAPTER, SOIL CONSERVATION SOCIETY OF AMERICA

Thank you. In addition to being a member of the Poteau/ Deep Fork Association, I'm also president of the Central Oklahoma Chapter of the SCSA.

I am very concerned about the flooding and drainage problem which exists on the Deep Fork River. In addressing this problem one must look at the soil resources as well as water resources.

Chairman Bevill, I know that your visit to Oklahoma in 1982 graphically illustrated the problems of the Deep Fork River. You and Congressman Watkins are familiar with the problems there. However, other members of the committee have not had the opportunity to see this destruction and learn of the impact that it has on the people of our area.

The Deep Fork River originates in the central part of Oklahoma near Oklahoma City. It is 220 river miles long with average fall of 2 feet per mile. The channel is crooked and filled with obstructions. Flooding occurs because of inadequate channel capacity caused by the watershed's flat channel slope (1 foot per mile) and low average velocity (1 foot per second). These conditions allow flood flows to escape the channel, fill the lowlands, and deposit the sediment load which results in additional flattening of these lower reaches. Over time the flood area is expanded because of the sediment deposition. Average annual damages of crops and structures is over $200,000.

The flood plain has additional problems. Due to the high sediment load of the river and poor natural drainage, levees have formed adjacent to the river. These levees trap flood waters and do not allow drainage once the flood waters have subsided. There are 34,000 acres of potential farmland that remains wet for many months. It is important to note that these are not natural wetland areas but have been formed throughout the years as a result of man's activities in the basin

and his lack of conservation and resource management programs. These conditions result in the overgrowth of trees and brush and make otherwise prime farmland unsuitable for agricultural purposes.

Since the early 1900's, efforts have been made to solve these problems. A large main ditch about 60 miles long which replaced the original channel and several laterals on both sides were installed. This provided reduced frequency and duration of flooding at some localities, but increased flood damages to areas downstream.

In 1934, the Corps of Engineers completed construction of more than 1,500 feet of a bendway on the Deep Fork River. The improvement consisted of snagging, cleaning, and enlarging the existing channel.

The Soil Conservation Service (SCS) has completed 30 flood retarding structures in the Bear, Fall, Coon Creeks of the watershed. The SCS has also completed 56 flood retarding structures and 5.8 miles of channel improvement in the Little Deep Fork Creek watershed.

Mr. Chairman, as a result of your recommendations from your visit in 1972, we proceeded to request the COE and the SCS to begin a joint effort to solve this major soil and water resource problem. A project that from past experience tells us that all agencies must pool their efforts in order to develop a master plan.

As their part of this effort the COE initiated a reconnaissance study of this problem area under the authority granted by the Canadian River and Tributaries Study. The funds were included in the FY84 Energy and Water Appropriations bill to initiate these studies. The Tulsa District of the Corps of Engineers has completed its reconnaissance study of the Deep Fork portion of the Canadian River study. This reconnaissance report is now under review at the Southwest Division Headquarters.

Our Association strongly urges the COE to begin and complete as soon as possible the feasibility phase of its study on these flood and drainage problems. We ask that this subcommittee provide the necessary funds for this study at full federal expense and at the level equivalent to the Corps expressed capability.

Mr. Chairman, I thank you for the opportunity to testify before you and the other committee members.

STATEMENT OF RON BOURBEAU, CITY MANAGER, SHAWNEE, OKLA.

I am Ron Bourbeau and I am City Manager of the City of Shawnee, Oklahoma. I am here representing the East Central Water Association. The East Central Water Association is a group of cities, counties,and rural water districts joined together to attempt to solve some of the severe water shortages of the area. Our City, along with other small cities and rural water districts of Pottawatomie County, Oklahoma, have historically been plagued with a lack of adequate water to serve the basic daily needs of our citizens. During the period of 1979 to 1980, the citizens of Shawnee were limited to an average of 125.5 gallons per capita day of water. This compares to that same period of an average daily consumption of 259 gallons per day for residents of Fort Smith or 249 gallons per day for citizens of Chickasaw, Oklahoma. During the time that we were rationing, the City was also providing water to the Pottawatomie County Development Authority, a rural water district serving the area residents surrounding our City. In addition to that, we shared our water at a time when we were rationing with our neighboring community to the south, Tecumseh. As you can see, our citizens never had the luxury of being able to even enjoy that which they had paid for and built on their own, but rather had to share it with our neighbors. Mr. Chairman, continued funding for the Parker Reservoir project is critical to the needs

and to the survival of East Central Oklahoma. Development of this project would, first of all, meet the basic needs of the area that are currently not available.

In addition to meeting the basic daily water needs, it offers great potential for industrial development, something which is grossly lacking in the area at the current time. Obviously, a project of this sort is simply bigger from an economic standpoint than our area. We all are aware of the need to balance the budget. It would seem to me that part of what needs to be considered when struggling with that enormous problem, is a definition of the Federal Government's role, and in that light, it would appear that a legitimate role would be to undertake problems such as this which are bigger than an area can possibly deal with. Again, support for this project solves the basic water needs of a large area of our state, as well as provide the potential for some industrial development, where for all practical purposes, none exists. Mr. Chairman, I appreciate the opportunity to speak before you today, and hope that you will consider our request in support of Parker Reservoir and East Central Oklahoma. Thank You

STATEMENT OF HERBERT R. HAAR, JR., ASSISTANT EXECUTIVE PORT DIRECTOR, PORT OF NEW ORLEANS

1. MISSISSIPPI RIVER-SHIP CHANNEL, GULF TO BATON ROUGE, LA.
We recommend that this deepening project be expedited in order to hasten receipt of enormous benefits that will materialize. We recommend that Congress appropriate $1,255,000 under General Investigations, an amount equal to the $1,255,000 Corps capability.

2. MISSISSIPPI RIVER - BATON ROUGE TO THE GULF, MAINTENANCE DREDGING, STABILIZATION
We recommend Congress appropriate $30,300,000 under O&M Gen. The additional funding of $1 million over the Administrations FY 86 Budget is to assure timely and adequate dredging of New Orleans Harbor.

3. MISSISSIPPI RIVER-GULF OUTLET (MR-GO), LA. MAINTENANCE DREDGING
We urge authorization of full capability of $4.44 million with retention at OCE level of an additional $1.44 million in contingency funds.

4. MISSISSIPPI RIVER-BATON ROUGE TO GULF OF MEXICO, LA., BANK NOURISHMENT
Continued improvement of structures comprising the training works of Southwest Pass could well decrease annual maintenance costs. We endorse the $8.8 million in construction funds included in the Administration's FY 86 Budget for continuing the design and construction of these critical projects.

5. MISSISSIPPI RIVER-GULF OUTLET, LA., NEW SHIP LOCK
The $7.2 million construction funds proposed for the New Ship Lock are essential to the completion of lock reevaluation studies with the bulk of funds dedicated to the Foreshore Protection along the reach of Bayou Bienvenue to the end of the Hurricane Levee Protection System.

6. MISSISSIPPI RIVER OUTLETS, VENICE, LA.
This project is essentially complete. We recommend the Administration's proposed $1,240,000 for continued maintenance of these critical east-west navigational channels.

7. GULF INTRACOASTAL WATERWAY, LOUISIANA-TEXAS SECTION
We urge continuation of general investigation funding in the amount of $550,000 to determine the advisability of deepening and widening project segment from New Orleans to Brownsville, Texas.

Mr. Chairman:

I am Herbert R. Haar, Jr., Assistant Executive Port Director of the Port of New Orleans. I am here to testify on behalf of the Board of Commissioners of the Port of New Orleans, a unit of local government of the State of Louisiana, on projects of vital interest to the development of Louisiana and neighboring Gulf States, the Mid-America States, and the Nation as a whole.

During this congressional session there will be major issues to be resolved in the areas of water resources development and methods of funding the maintenance and infrastructure costs of such projects. As you move forward in coming to grips with these issues and with the broader ones of mounting budget deficits and enormous trade imbalances, we in the port industry assure you that we, too, share with you the very same concerns that trouble you. As in the past the U.S. port industry continues to play a dominant role in the economic livelihood of our nation. More importantly, we must not impose any pricing restrictions on our products that would make us less competitive in the world markets and, indeed, that would impede our revival from the world-wide trade slump of the past two years. Even during that period it is estimated that our seaport foreign trade for fiscal year 1983 brought in $6.5 billion in Customs duties out of a total of $9.1 billion collected. For fiscal year 1984 an estimated $8.3 billion out of a total of $11.8 billion in Customs duties were collected. In contrast, the U.S. Coast Guard and Army Corps of Engineers expenditures for

navigation purposes amount to around $700 million annually -- a mere fraction of the government's intake from Customs duties at seaports. Clearly, the government has a vested fiscal interest in ensuring that the U.S. port and navigation systems adequately meet the needs of this nation's foreign waterborne commerce. We must not rule out the feasibility of the use of Customs revenues to fund navigation channel development and waterways maintenance programs, a position having the general support of the U.S. port industry as well as of many members of this Congress.

Our Louisiana deep-draft ports have played an ever-increasing role in the growth of the United States' share of the international markets. From a navigational, economic and delivered-price perspective, the Lower Mississippi River port area is the entire Baton Rouge - Gulf corridor; as such, this river reach is one of the longest ports in the world. Lying at the mouth outlet of the magnificent Mississippi River and Tributaries inland waterway system, these seaports service the foreign trade as well as domestic commerce of the Mid-America Hinterland.

In brief, Louisiana ports are a major industry within the State - for example, the employment impact in annual jobs within Louisiana for the Port of New Orleans alone is over 213,000 jobs. The expenses incurred in the handling of foreign-bound or foreign-originated cargo cause major economic impacts well beyond the state and far into the great Mid-America Hinterland:

A. The 64.5 million tons of grain exported in 1983 from the Louisiana seaports representing 50 percent of the total U.S. grain exported that year comes from 17 states.

B. The 6.1 million tons of bituminous coal exported from these ports in 1983 representing 8.0 percent of the total U.S. coal exported that year comes from 7 states.

Continued growth and development of this four-port complex is essential to the national economy. We strongly feel, as we have pointed out before, that this growth is being inhibited by the lack of an adequate deep-water channel of 55 foot depth required by the larger vessels presently engaged in world commerce. The Corps of Engineers' recent studies realistically revealed that of the ships navigating the 40-foot channel in the Mississippi River in 1980, roughly 48 percent of the bulkers, 70 percent of the tankers and 10 percent of the general cargo vessels moved light-loaded because of the restrictive Federally-authorized project depths. Unfilled bottoms yield high operating costs and, correspondingly, return low yields in revenues. We strongly urge that the Corps be funded to their full capability of $1,255,000 in General Investigations in Mississippi River-Ship Channel, Gulf to Baton Rouge (55-ft. Channel.)

Mr. Chairman, this 55-foot channel project is of vital importance to the economy of Mid-America as well as to the nation as a whole. With the view to expediting the authorization of this deepening project and the start of the first spade work, the Governor of Louisiana on December 18, 1984, wrote to Assistant Secretary of the Army for Civil Works, Robert K. Dawson, that because of the project's sound economic basis and its national importance, the state of Louisiana would fund 30 percent of initial construction costs of a 45-foot channel. The cost-sharing offer was consistent with the provisions of Senate Bill S 1739 of the past Congressional session. However, with the Administration's cost-sharing provisions accompanying the Administration's Budget for FY 86, the impact of recovering user charges are such that they would substantially negate the benefits of a deeper river channel and thereby dissuade channel use by larger vessels. Our studies show that the Administration's proposal for new deep draft navigation projects would require a user charge of between

$0.46 and $1.01 per ton on the cargo which uses the deeper Mississippi River channel. These figures are for the first phase 45-foot project; the ultimate 55-foot project would require considerably larger charges. In addition, the Administration's proposal to recover existing operations and maintenance costs of the present river channel would require a user charge of from $0.23 to $0.36 per ton imposed on each of the 175 million tons of oceangoing cargo which moves through the Lower Mississippi River ports. Administration proposals to recover present inland operations and maintenance costs would have an even more disastrous effect on trade. Full implementation of these proposals, coupled with the present inland fuel tax, would impose an equivalent user charge of $2.29 per ton on typical export movements of coal and grain. On grain loaded at Minneapolis and exported via the Mississippi, the inland user charge alone would amount to $3.55 per ton. This charge would be in addition to the deep draft charges previously cited.

Mr. Chairman, the Bushnell, Pearsall, and Trozzo, Inc., dated September, 1983, official U.S. Department of Commerce report is a serious indictment of the concept of imposing waterway users fee on U.S. foreign and domestic deep-draft commerce. If members and their staffs of this Committee have not taken the opportunity to review this report, "Economic Effects of Levying a User Charge on Foreign and Domestic Commerce to Finance Harbor Maintenance," I strongly recommend that you do so.

The report analyzes the economic effects of levying a 25 cent per ton user charge on U.S. Foreign and domestic commerce to finance Corps of Engineers operations and maintenance costs for U.S. deepwater coastal and Great Lakes ports. What the author's findings show is that while the user fee would indeed return some revenue to the federal government, there would be, nevertheless, perceptibly negative impacts, not only on ports and shipping, but on port hinterlands and on the government itself. For the industries, it would mean declines in sales, employment, income and cargo. Customs collections would also decrease, as would federal, state, and local income and direct and indirect business taxes. Moreover, since U.S. exports would suffer to a greater extent than U.S. imports, the user fee would also have negative impact on the U.S. balance of trade.

The 25 cent charge would generate $337 million to cover O&M costs incurred by the Corps for U.S. deepwater coastal and Great Lake ports. However, the model produced a decline in traffic of approximately 10 million tons of cargo in response to the charge; this would have generated revenues of $337 million, which in turn results in declines in employment of 10,000 jobs and in incomes of approximately $260 million.

In summary, the Bushnell, Pearsall and Trozzo study is a study that should cause all of us to tread more lightly before reaching the position of being over zealous advocates of user fees as the answer to all budgetary problems.

The Port of New Orleans is the number 1 port in the Nation with a total of foreign and domestic waterborne commerce tonnage of 156.3 million tons in 1983 and the Port of Baton Rouge located 125 miles upriver is the fifth. Both port complexes are entirely dependent upon timely and adequate dredging of the Southwest Pass to provide access to the Gulf. Judging from past experiences with spring thaws bringing higher river stages and higher rates of siltation, we feel that the Administration's proposed budget of $29,330,000 must be increased to the full $30,300,000 Corps' Capability. We are equally concerned with the adequacy of the budget proposal and the Corps Capability of $4,440,000 for the Mississippi River-Gulf Outlet Maintenance

Dredging. We urge authorization of full capability with, perhaps, retention of additional funds at OCE level for contingency funding. Our records indicate that for FY 78 through FY 82, expenditures in O&M 82 dollars averaged $5.88 million per year. Maintenance costs on this project cannot be related to any shoaling rate but are related to severity and intensity of unpredictable Gulf storms.

We note with distinct pleasure that the Administration's Budget includes $8.8 million in construction funds for continuing construction of foreshore dikes and bank nourishment activities below Venice in the River and in Southwest Pass. Restoration of bulkheads and stabilization of east and west jetties offer a tremendous return on investment in that once the project is completed, there will be a significant decrease in O&M costs over that required to maintain the existing 40 ft. channel.

The $7,200,000 construction funds proposed for the Mississippi River - Gulf Outlet, New Ship Lock project is also essential at this time. These monies would allow completion of the reevaluation studies on the lock with the bulk of the money being applied to the completion of the Foreshore Protection along the reach of Bayou Bienvenue to the end of the Hurricane Levee Protection System.

The Mississippi River Outlets, Venice, Louisiana, project is essentially complete. We are pleased that the Administration's proposed budget includes $1,240,000 for continued maintenance of these east-west navigation channels that provide safe and essential offshore support access to energy related industries.

Finally, we urge continuation of funding the general investigation to determine the advisability of deepening and widening that segment of the Gulf Intracoastal Waterway from New Orleans to Brownsville, Texas. The requested amount is $550,000. This study addresses our concerns over bank erosion, saltwater intrusion and required improvements for the safety and efficiency of the waterway.

Mr. Chairman, this concludes my statement.

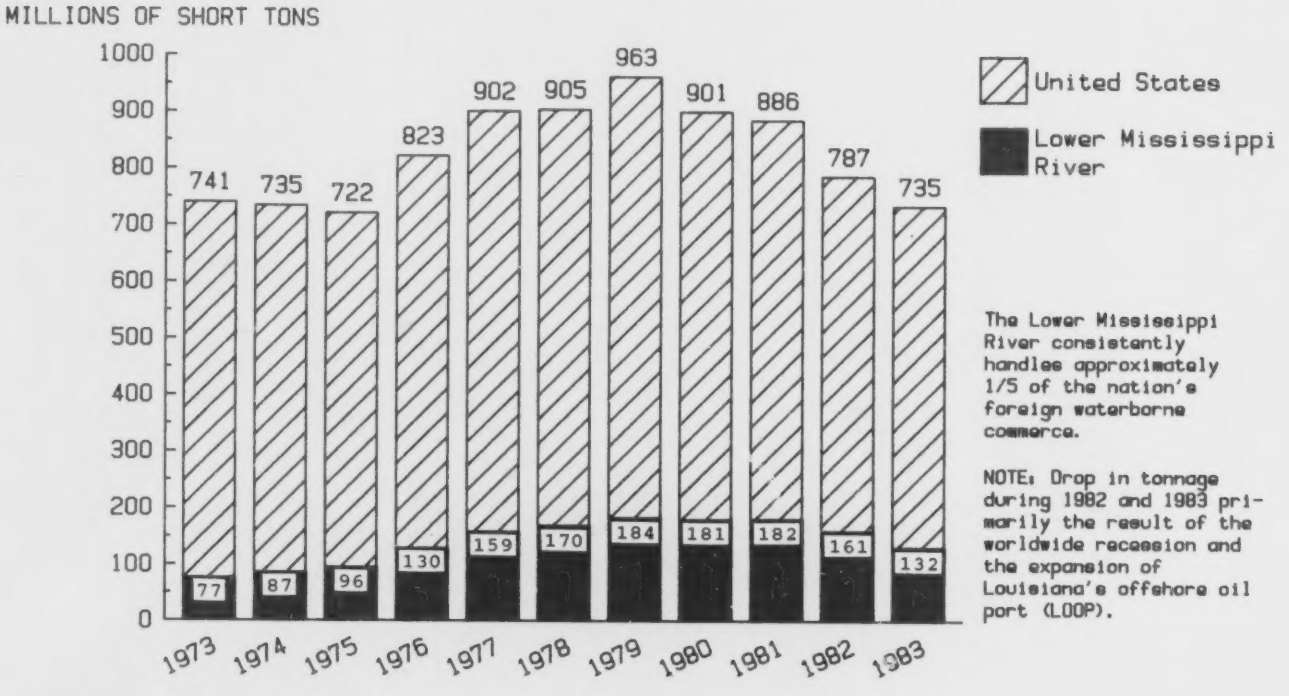
THE NATIONAL IMPACT OF THE U.S. SEAPORT INDUSTRY

The U.S. seaport industry has a tremendous impact on our national economy. In 1982 alone, it generated:

- more than one million jobs
- $70 billion in gross sales
- $35 billion of the Gross National Product
- $23 billion in personal income
- $10 billion in federal taxes
- $5 billion in state and local taxes
- $6.4 billion in customs revenues, and
- $1.5 billion towards the U.S. balance of payments.

The marine terminals that form the cornerstone of the U.S. seaport industry are almost totally the result of private sector and local port authority investment. In 1982, the cash value of these terminals was $59.6 billion with a replacement value of $78.3 billion.

United States and Lower Mississippi River
Foreign Waterborne Commerce
Calendar Years 1973 - 1983



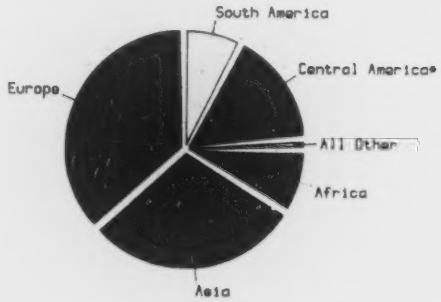
The Lower Mississippi River consistently handles approximately 1/5 of the nation's foreign waterborne commerce.

NOTE: Drop in tonnage during 1982 and 1983 primarily the result of the worldwide recession and the expansion of Louisiana's offshore oil port (LOOP).

Port of New Orleans
Marketing Division

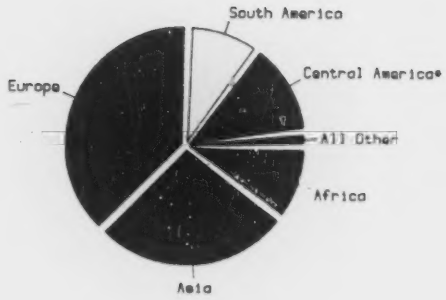
SOURCE: U. S. Department of Commerce

Lower Mississippi River
Foreign Waterborne Commerce
Calendar Year 1983



Tonnage**
By World Area

PRINCIPAL COUNTRIES:	
Japan	20,666
Netherlands	13,144
Mexico	11,047
Fed. Rep. of Germany	5,070
Spain	4,636
All Other Countries	77,096
TOTAL	131,659



Dollar Value***
By World Area

PRINCIPAL COUNTRIES:	
Japan	$ 3,229
Netherlands	2,883
Mexico	1,741
Fed. Rep. of Germany	1,234
United Kingdom	1,120
All Other Countries	16,280
TOTAL	$26,487

*Includes Mexico and the Caribbean
**Thousands of short tons
***Millions of dollars

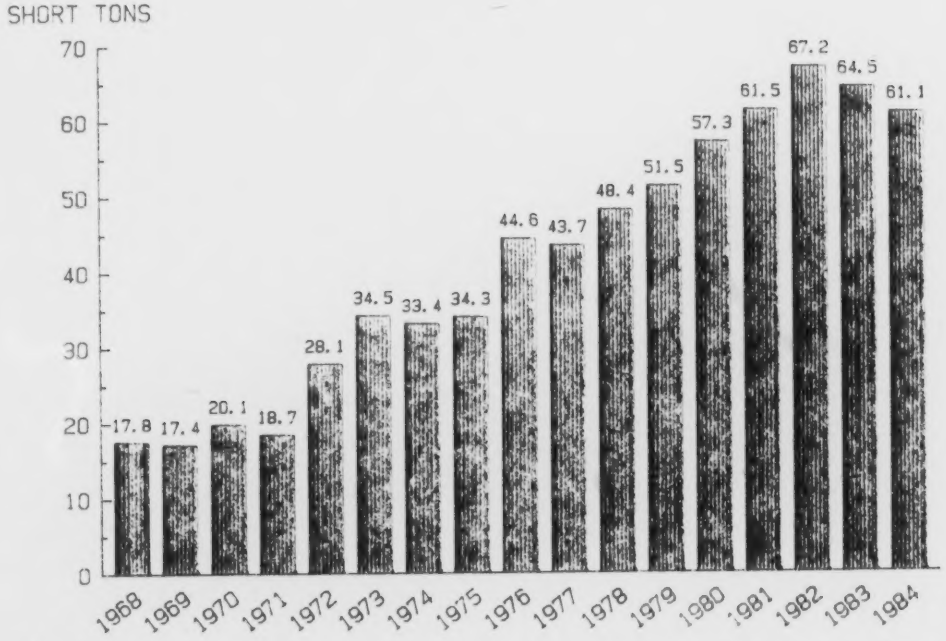
SOURCE: U. S. Department of Commerce

Lower Mississippi River
Principal Commodities
Calendar Year 1983

IMPORTS 34,877,000 Short Tons	
Crude Petroleum	17,538,000
Metalliferous Ores	5,028,000
Crude Minerals & Fertilizers	2,665,000
Iron & Steel	2,196,000
Lubricating Oils	1,895,000
All Others.....	5,555,000

EXPORTS 96,782,000 Short Tons	
Grains (unmilled)	62,978,000
Animal Feeds	12,376,000
Petroleum & Related Products	6,285,000
Coal & Coal Products	6,194,000
Organic & Inorganic Chemicals	1,822,000
All Others.....	7,127,000

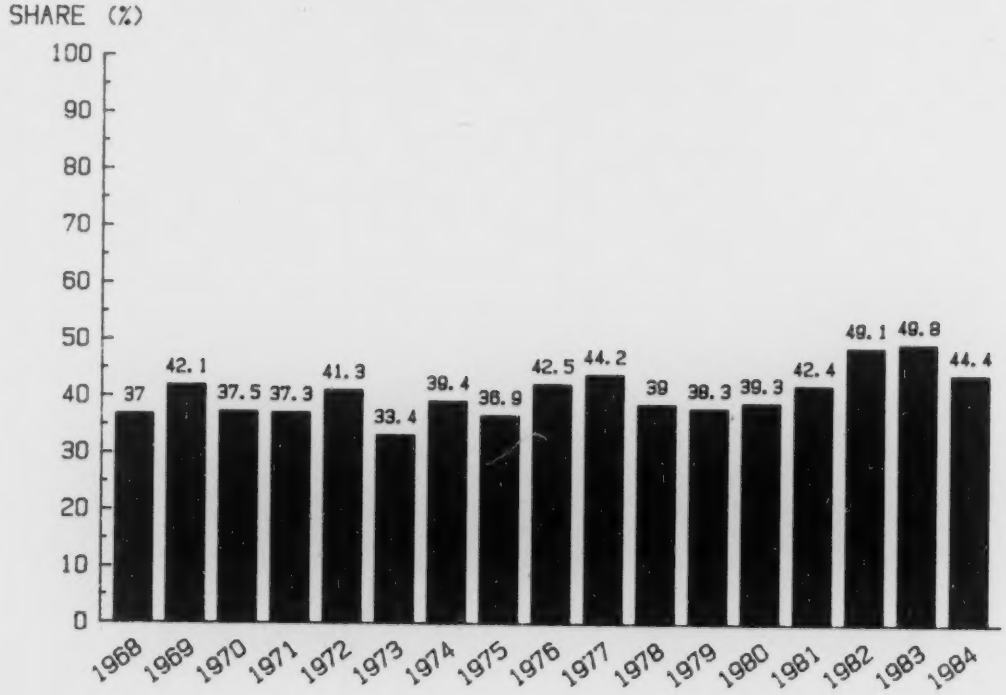
Lower Mississippi River Grain Exports
In Millions of Short Tons
Calendar Years 1968 - 1984



Port of New Orleans
Marketing Division
SOURCE: USDA (converted from bushels to tons)

NOTE: 1984 value figures indicate grain exports from the Lower Mississippi River totalled $10 billion.

Lower Mississippi River Grain Exports
As a Percentage of the United States *
Calendar Years 1968 - 1984

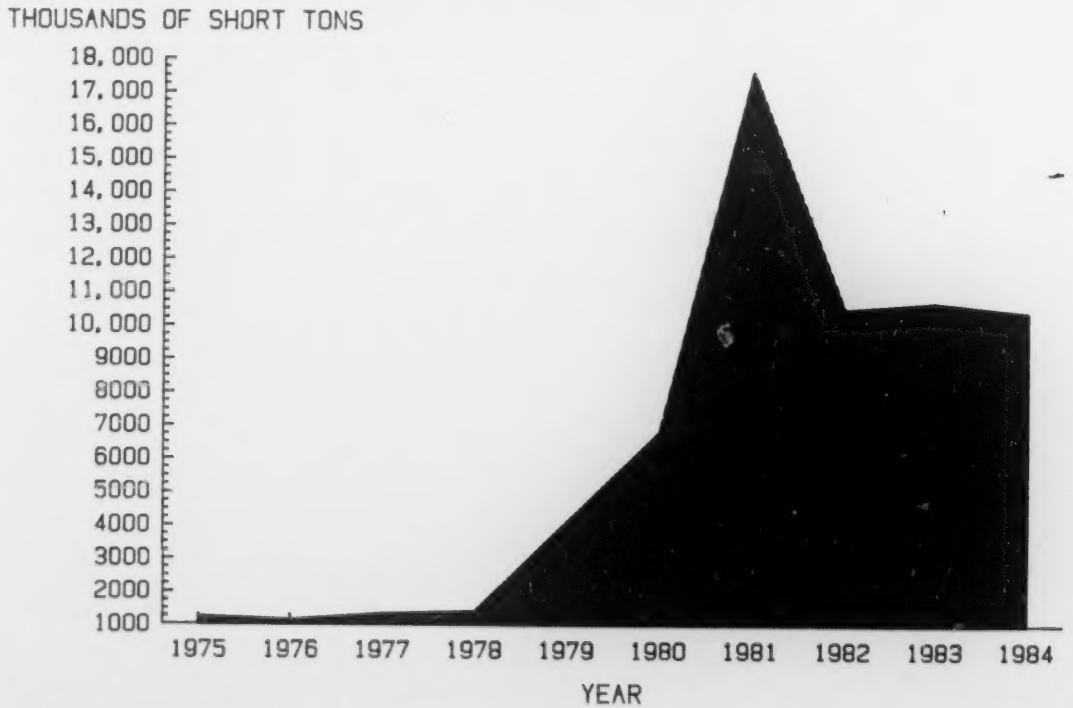


Port of New Orleans
Marketing Division

* Market Share Based on Bushels

Source: U. S. Department of Agriculture

Lower Mississippi River
Oceangoing Bituminous Coal Shipments
1975 - 1984



Marketing Division
Port of New Orleans

Source: U. S. Army Corps of Engineers ('75-'83)
Miss. Valley Coal Exp. Council ('84)

The Lower Mississippi River:
Mid-America's Gateway to the World

LMR Grain Exports: Principal Sources

Alabama
Arkansas
Illinois
Indiana
Iowa
Kansas
Kentucky
Minnesota
Mississippi
Missouri
Nebraska
North Dakota
Ohio
Oklahoma
South Dakota
Tennessee
Wisconsin

LMR Coal Exports: Principal Sources

Alabama
Indiana
Illinois
Kentucky
Pennsylvania
Tennessee
West Virginia

IMPACT OF A 45 FOOT DEEP
MISSISSIPPI RIVER CHANNEL TO MILE 172 A.H.P.

COST:
- $33 million initially, $11 million annually

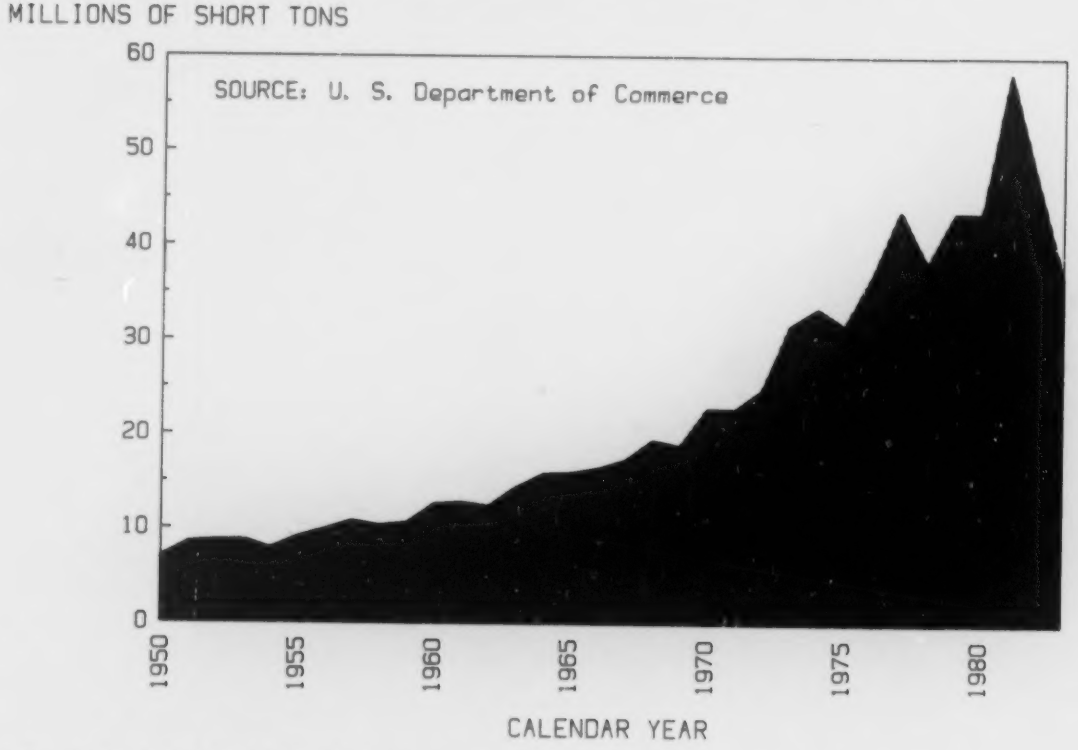
BENEFITS:
- $93 million annual transportation savings
- $1.72 per ton savings on grain shipments
- $2.42 per ton savings on coal shipments

IMPACT OF A 55 FOOT DEEP
MISSISSIPPI RIVER CHANNEL TO MILE 172 A.H.P.

COST:
- $128 million initially, $21 million annually

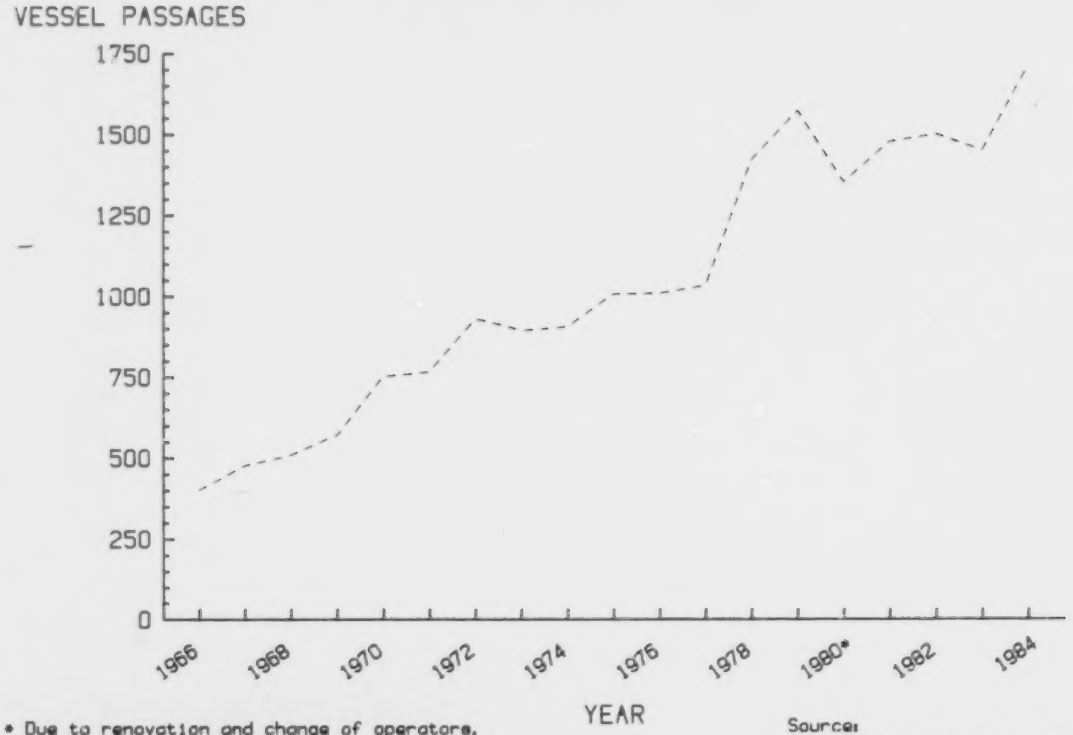
BENEFITS:
- $146 million annual transportation savings
- $2.05 per ton savings on grain shipments
- $3.25 per ton savings on coal shipments

Port of New Orleans
Foreign Waterborne Commerce *
Calendar Years 1950 - 1983



* General and Bulk Cargo Included

Port of New Orleans Vessel Passages
Mississippi River Gulf Outlet (MRGO)
Calendar Years 1966 - 1984



* Due to renovation and change of operators, operations at the Public Bulk Terminal were temporarily suspended from 9/1/80 thru 4/81.

Source:
U. S. Army Corps of Engineers (vessel data)

Port of New Orleans
Mississippi River Gulf Outlet (MRGO)
1983 Total Waterborne Commerce

ECONOMIC IMPACT
In 1983, the waterborne commerce handled on the MRGO generated $239,140,000 in direct economic impact. Total (direct and indirect) economic impact of the MRGO in 1983 was $380,450,000.

Containers	1,832,000 S/T
Iron & Steel	868,000 S/T
Barytes	450,000 S/T
Clay	382,000 S/T
All Other	1,903,000 S/T
TOTAL	5,435,000 S/T

Source: U. S. Army Corps of Engineers
Port of New Orleans (Container Data)
Port of New Orleans (Economic Impact)

ECONOMIC IMPACT OF USER CHARGE ON THE NATION
(IN 1979 DOLLARS)
USER CHARGE = $0.25 PER TON OF OCEANGOING COMMERCE

	TOTAL FOREIGN & DOMESTIC TRADE		
	PORT/SHIPPING EFFECTS	HINTERLAND EFFECTS	TOTAL
Direct Sales (in $1,000)	- 39,128	-126,066	-165,194
Employment (no. of jobs)	- 3,267	- 6,846	- 10,113
Income (in $1,000)	- 77,193	-182,852	-260,045
Taxes (in $1,000)	- 20,175	- 46,958	- 67,133
Duties (in $1,000)	- 12,147	-	- 12,147
User Charge (in $1,000)	336,847	-	336,847
Cargo (in 1,000 short tons)	- 9,512	-	- 9,512
Balance of Trade (in $1,000)	- 55,816	-	- 55,816

SOURCE: "Economic Effects of Levying a User Charge on Foreign & Domestic Commerce to Finance Harbor Maintenance", Bushnell, Pearsall & Trozzo, Inc., September 16, 1983

PREPARED BY: Marketing Division
Port of New Orleans
March 26, 1985

RELATIVE IMPACT OF LEVYING $0.25 PER TON USER CHARGE
ON ALL U. S. OCEANGOING COMMERCE

Impact	Change per $ million of revenue
Waterborne Commerce	- 28,200 short tons
Employment	- 30 jobs
Income	-$772,000
Taxes	-$199,300
Duties	-$ 36,000
Waterborne Balance of Trade	-$165,700
Direct Sales	-$490,400

SOURCE: "Economic Effects of Levying a User Charge on Foreign & Domestic Commerce to Finance Harbor Maintenance", Bushnell, Pearsall & Trozzo, Inc., September 16, 1983

POTENTIAL WATERWAY USER CHARGES
UNDER REAGAN ADMINISTRATION PROPOSALS
FOR TYPICAL EXPORT MOVEMENTS OF GRAIN AND COAL
ON THE MISSISSIPPI RIVER
(EXISTING 40-FOOT PROJECT)

NATURE OF CHARGE	DOLLARS PER TON (TYPICAL)
Inland O & M Recovery	
1.5 mills/ton mile	$1.65/ton
10¢/gallon fuel tax	0.37/ton
Coast Guard Cost Recovery	
0.25 mills/ton mile	0.27/ton
Total Inland User Charge	$2.29/ton
Deep Draft O & M Recovery	
Mississippi River Channel	0.23/ton
Port of New Orleans Harbor	0.13/ton
Total Deep Draft User Charge	$0.36/ton
Total Potential User Charge	
Existing 40-foot project	$2.65/ton

PREPARED BY: Marketing Division
Port of New Orleans
March 26, 1985

STATEMENT OF NEW ORLEANS STEAMSHIP ASSOCIATION

1. Repairs to Jetties, Dikes and Maintenance Dredging of Southwest Pass and Maintenance Dredging of the Mississippi river from Baton Rouge to the Gulf and Construction of New Anchorage Area.

The Lower Mississippi River, from the Gulf to Baton Rouge, ranks as the No. 1 Port in the world. If the cargo-carrying capacities of vessels are again restricted by reduced entrance channel depths, this area will rapidly lose its world port status. This will have a detrimental effect on the National economy. The President's budget appropriation for FY86 is $29.3 million. We urge that $30.3 million for Operation and Maintenance, General, Mississippi River, Baton Rouge to the Gulf, be appropriated. The $1 million over the President's Budget would be used for necessary dredging of the New Orleans Harbor. We urge the approval of the $9.9 million in the President's budget for dike construction below Venice. This will result in the reduction of O&M costs in the future.

2. The Mississippi River-Gulf Outlet Maintenance Dredging.

The number of vessels using the Mississippi River-Gulf Outlet has continued to increase. Located on this waterway are the Port of New Orleans' Bulk Handling Plant, the new container facilities, the ro-ro terminal and additional facilities under construction which provide newer cargo handling methods to accommodate the larger ships now serving international trade. It is recommended that the Corps' full capability of $4.44 million be appropriated for Mississippi River-Gulf Outlet, Operation and Maintenance, General.

3. The Mississippi River-Gulf Outlet, Construction, General.

The planning and design for the urgently needed New Ship Lock continues. This lock, once in operation, will relieve existing hazardous congestion and costly delays to foreign commerce. It will promote the economic growth and development of water-oriented industries along the Mississippi River and the Mississippi River-Gulf Outlet, thus promoting the future growth of the Port area of New Orleans. It is urged that the Congress provide the $7.2 million as requested in the President's budget for FY86 to satisfy the Corps of Engineers' capability for the continuance of the preliminary lock design and related matters.

4. Fifty-Five Foot Channel for Lower Mississippi River.

We recommend that the Corps' full capabilities of $1,255,000 be appropriated to continue this study and preliminary design for this project.

My name is Channing Hayden. I am Vice President of the New Orleans Steamship Association. Our membership of some 58 steamship owners, operators, agents and stevedores on the Lower Mississippi River is associated with hundreds of ship owners in international commerce.

My testimony concerns projects essential to the future of the Lower Mississippi River from Baton Rouge to the Gulf. These projects, listed below, impact the nation in jobs and our ability to compete in world markets. They should be funded as noted in our summary.

1. Repairs to jetties, dikes and maintenance dredging of Southwest Pass. Maintenance dredging of the Mississippi River from Baton Rouge to the Gulf. Enlargement and deepening of the Pilottown Anchorage.
2. Maintenance dredging of the Mississippi River-Gulf Outlet.
3. Continuation of the Design Program of the Mississippi River-Gulf Outlet New Ship Lock.
4. Development of final plans for the Fifty-Five Foot Channel for Lower Mississippi River.

Repairs to the jetties and dikes and maintenance dredging of Southwest Pass is vital in keeping project draft. Project draft, in turn, ensures that the Mississippi River's deep water ports will continue to handle the country's foreign waterborne commerce in the most cost effective way possible.

In 1983 (most recent statistics available) the Lower Mississippi River handled 132 million tons of our country's foreign waterborne commerce. This is a 72.5% increase over 1973. But, in the past, shoaling in Southwest Pass (see table below) has caused cargo diversion, adding millions of dollars in operating cost. The added cost has caused the loss of jobs in our area and made American products less competitive on the world market.

The table below shows the history of draft restrictions in Southwest Pass.

History of Days During Which Vessels Were Restricted to Less Than Project Depth at Southwest Pass

YEAR	VESSELS UNDER 100,000 DWT	VESSELS 100,000 DWT & OVER
1970	205 Days - 56.2%	205 Days - 56.2%
1971	139 Days - 38.1%	139 Days - 38.1%
1972	0 Days - 0.0%	0 Days - 0.0%
1973	278 Days - 76.2%	278 Days - 76.2%
1974	219 Days - 60.0%	259 Days - 70.9%
1975	157 Days - 43.0%	182 Days - 49.9%
1976	0 Days - 0.0%	120 Days - 32.9%
1977	0 Days - 0.0%	0 Days - 0.0%
1978	0 Days - 0.0%	97 Days - 26.6%
1979	94 Days - 25.8%	182 Days - 49.9%
1980	59 Days - 16.2%	254 Days - 69.6%
1981	0 Days - 0.0%	327 Days - 89.6%
1982	0 Days - 0.0%	152 Days - 41.6%
1983	71 Days - 19.5%	312 Days - 85.5%
1984	92 Days - 25.2%	274 Days - 75.1%

During the past 15 years vessels over 100,000 deadweight tons (DWT) have had less than project draft more than 50% of the time. But for these large vessels the situation is getting worse. Vessels over 100,000 DWT have faced draft restrictions almost 75% of the time during the past five years and 80% of the time during the past two years. As many as 700 of these large vessels call on the Lower Mississippi River annually.

To show the effects of Southwest Pass restrictions, we studied 50 vessels prevented from loading to project draft because of shoaling. These were only a few of the many vessels so affected. They were forced to leave behind 350,000 tons of foreign commerce valued at over $50 million. On the current market the cargo's value would be substantially greater. The tonnage withheld from export caused the loss of millions of dollars in economic benefit to the local and national economy. For example, one of the vessels studied was a 122,266 DWT bulk carrier. Limited to a draft of 36 feet, rather than 40 feet, it was forced to leave behind 11,328 tons of cargo worth $1.2 million. Because of complex international chartering arrangements, this cargo was not carried on other ships.

We cannot emphasize too strongly that draft restrictions will have a detrimental effect on the future of the Lower Mississippi River Port Facilities and the important Mississippi Valley they serve. The inability to constantly maintain project depth deters charterers and owners from contracting to load full cargoes of bulk commodities at local port facilities because of the uncertainty of the controlling draft. The uncertainty of channel depths could cause the entire area from the Gulf to Baton Rouge o become a penalty port area.

We make a special appeal for appropriations in FY86 to avoid in the future the serious shoaling problems that have affected Southwest Pass in the past. The Port of New Orleans has shown that each 900 tons of cargo creates one job. Thus, our request is for adequate funding to preserve and protect the 146,000 jobs created by the foreign waterborne commerce on the Lower Mississippi River.

If the Lower Mississippi River is to continue as the Country's No. 1 Port, we must be able to serve the larger, more efficient vessels. To do so, the entrance to our port, Southwest Pass, must not only be maintained at all times at its authorized project depth, it must be deepened.

The need for channel deepening is underscored by the growth of two export cargoes on the Lower Mississippi River--grain and coal. Up to 1960 one grain elevator operated on the Lower Missisippi River. By 1984, with 11 elevators and numerous mid-stream loading operations, grain exports had grown to 59 million tons per year on the Lower Mississippi. In addition to the grain moved in 1984, a 193% increase over the last fifteen years epresenting 44% of 1984 U.S. grain exports, millions of tons of petroleum and petroleum products and various ores are carried by large vessels to and from facilities on the Lower Mississippi River.

Also, coal exports increased from 1.25 million tons in 1975 to 6.1 million in 1983. Studies by the Board of Commissioners of the Port of New Orleans predict that exports of grain and coal will reach 150 million and 120 million tons per year, respectively, by the year 1990.

However, these potential levels may only be reached with a 55-foot channel. It is estimated that $4 per ton or more can be saved exporting grain if the channel could accommodate vessels loaded to 55 feet. A savings of $400,000 or more could be realized on just one ship loading 100,000 tons of grain. Brazil, Argentina, Australia, and Canada are becoming more aggressively competitive in the world grain market. It would not be surprising in the future to find America's competitive edge in world grain trade determined solely by the lower transportation costs noted above.

Combined with the projected growth in grain exports is the potential for explosive growth in coal exports. Here, too, is a potential savings in transportation costs to our customers--$6 per ton or more if the channel would allow vessels to load to 55 feet.

The increase in grain and coal exports will have several positive effects on the U.S. economy. Grain, traditionally, has had a positive effect on our balance of payments. The same can be expected of coal exports. But the greatest effect that deepening the channel will have is the creation of new jobs. Based on data from a University of New Orleans study, the increased grain and coal exports through the Lower Mississippi River could result in an additional 35,000 jobs, or more, being created. Based on the impact on the Lower Mississippi River, the jobs created nationally will be very significant. Because of its tremendous positive impact, the Corps' 8.1-to-1 benefit-cost ratio of this $525 million project may be conservative, expecially since growth in coal exports were not included.

In order that the strength and growth of the Mississippi Valley will continue, we urge that Congress appropriate the Corps' full capability of $1.225 million for continuance of the study and preliminary design for this project. Additionally, this project must be accomplished without the imposition of user fees. Such fees would wipe out the economic benefits of deepening the channel. In fact, as Col. Haar's statement shows, user fees would make American products like grain and coal less competitive than they are now in spite of the tremendous benefits from the 55 foot channel.

Since 1974 navigational interests have been urging a very important project in our area--the enlarging and deepening of Pilottown Anchorage. This anchorage is strategically located at the entrance to the Lower Mississippi River Port Complex. Some years ago Congress approved the project and the Corps' study was completed. However, the anchorage has not yet been widened or deepened to 40 feet. During the periods of intense fog we experience, large and/or deeply laden vessels need this anchorage as a safe haven. Without it, these vessels must transit to the Boothville Anchorage--many times with zero visability. This project is vital to navigational safety and we urge you to provide the needed funds. Further, here is another benefit from the deepening of the Pilottown Anchorage. There is strong evidence that silt material from the anchorage results in shoaling within the channel in the vicinity of the Head of Passes, causing difficulties for navigation. Thus, removal of this siltation would assist in maintaining stability in channel depth for that area.

In addition, funds are needed to have dustpan dredges available to dredge the crossings above the city of New Orleans. These crossings control the draft at 8 of the 11 area grain elevators.

The President's budget for Operations & Maintenance, General, ississippi River, Baton Rouge to the Gulf is $29.3 million. We recommend an appropriation of $30.3 million. The additional funds will be used for necessary dredging.

We urge approval of the President's budget of $8.8 million for dike construction and bank nourishment below Venice.

The growth of the Port of New Orleans depends, in large measure on the Bulk Handling Plant and the Port's container and Ro-Ro facilities, among others, located on the Mississippi River-Gulf Outlet. In 1984, there were 1703 deep draft transits of this channel--up 64.7% over the past ten years. This seaway has a project depth of 36 feet. Shoaling has resulted in the loss of project draft. Within the past four years, the controlling depth on this channel has been less than project for 615 days--or 42% of the time. For safety reasons, transit restrictions apply to vessels with a draft of 30 feet or more. To improve safety on this channel and reduce or eliminate transit restrictions, funds should be appropriated to dredge and maintain a holding area and provide updated and additional navigational aids. In addition, we request that the Congress appropriate $4.44 million for Operations & Maintenance, General, Mississippi River-Gulf Outlet.

The Public Bulk Terminal and the container terminals are located on the Mississippi River-Gulf Outlet, while the grain facilities, many LASH-SEABEE terminals, and the public wharves are located on the Mississippi River. An adequate route between the Mississippi River-Gulf Outlet and the river is essential. The shortest route is an inefficient, antiquated 50-year-old lock with a width of 75 feet and limited to a depth of 30 feet. Its maximum capacity has long been exceeded. The waiting time for passage through the lock at present averages from 8 to 10 hours; however, waiting time on occasion has been in excess of 24 hours.

An adequate ship lock, 150 feet by 1200 feet by 50 feet, has been authorized; and we urge that Congress provide the President's requested $7.2 million, a part of which will support the Corps of Engineers' capability for continuing the preliminary design of this project.

I appreciate the opportunity to appear before the Committee.

Statement of the Associated Branch Pilots, Port of New Orleans

I am Jacques B. Michell, President of the Associated Branch Pilots, the Bar Pilots for the Port of New Orleans.

The Associated Branch Pilots is one of three pilot associations applying specialized piloting techniques to meet the demands of safe and efficient navigation in one of three distinct areas on the part of the Mississippi River between Baton Rouge, Louisiana and the Gulf of Mexico. The Bar Pilots, as we are called, pilot vessels through the narrow and shallow entrance to the Mississippi River system known as Southwest Pass. We are also pilots for the Mississippi River-Gulf Outlet, which is a manmade channel, seventy-five miles long, that begins in the Gulf of Mexico and intersects the intercoastal waterway system at New Orleans.

I am here to testify with the Board of Commissioners of the Port of New Orleans, on projects that are of vital interest to safe navigation and maritime commerce on the lower Mississippi River.

A United States Army Corps of Engineers study has reported favorably on a deep draft access to the lower Mississippi River via Southwest Pass. The deep draft access would enable vessels with drafts of as much as 55 feet to enter the river and call at ports as far upriver as Baton Rouge. The channel in the lower Mississippi River is presently maintained at a federally authorized depth of forty feet which places a physical restriction on the ability of many vessels calling in the river to operate at maximum efficiency. The forty foot limit is far below the capabilities of vessels that were built more than twenty years ago.

Containerization, which has firmly established itself as the most economical and efficient method of transportation of general cargo for the present and future, continues to develope. Ships have already been constructed that are capable of exceeding present channel depths. Expansion of container facilities to meet the increasing numbers of these specialized vessels that call at the Port of New Orleans continues, with new developement already planned.

The versitility of the Lower Mississippi River system in accomodating road, rail, and the most cost effective mode of transportation -waterborne transportation- is vital to the local area, the states in the region of the Mississippi River valley, and the nation.

However, development of access to these facilities has failed to keep pace. A third of all the vessels calling in the Mississippi River have the capability of loading to depths greater than the present forty foot project. Percentages are much higher in the individual catagories of bulk carrier, tanker, and general cargo vessel. Vessels greater than 120,000 deadweight tons whose drafts, when fully loaded, would exceed fifty-five feet call regularly in the Mississippi. Vessels of more than 240,000 deadweight tons have also entered the river at drafts far less than their capabilities. All conditions, except increased channel depth, are available and ready in the Mississippi River.

The Mississippi River's companion channel, the Mississippi River-Gulf Outlet, continues to increase in usage. The increase in the volume of traffic results in a reduction in the need for maintenance dredging as the passage of vessels using the channel assists in the maintenance of channel depths. Some maintenance dredging, particularly of the area not bounded by land, will be needed and funding of this project should continue.

Over the years the Corps of Engineers has studied, developed, and improved the channels leading to the facilities at the several ports along the Mississippi River by constructing training works, pile dikes, bulkheads and bank nourishment projects. As they continue to develope and improve those channels their design makes them self-maintaining.

Despite the Corps efforts conditions periodically occur that require individualized attention. Unpredictable and above average snowfall and rainfall can produce increased amounts of siltation in Southwest Pass. By proper management and prioritization, the Corps has been able effect timely restoration of the authorized channel dimensions. Full Corps capability in this area should continue to be funded in order to insure the Corps ability to continue to respond effectively.

Funding of the Corps initiatives in the lower Mississippi River is money well spent and money that will ultimately return. I urge your support of these very important projects.

Mr. Chairman, this concludes my statement.

CLOSING REMARKS

Senator STENNIS. Thank you very much. I have enjoyed hearing your testimony, the favorable parts and the needy parts. If we could have normal days up here to get at things that are constructive, that would do some good and strengthen the country, I would be much happier. We fight wars in space, fight wars all over the world. We will pull through that.

TEXAS WATER RESOURCE DEVELOPMENT PROJECTS

PREPARED STATEMENTS FOR THE RECORD

Senator STENNIS. Now, Senator Bentsen, Congressmen Brooks and Pickle of Texas have sent statements which I will include, along with the Trinity Improvement Association of Texas and other statements relating to Texas water projects.

[The statements follow:]

STATEMENT OF SENATOR LLOYD BENTSEN

I appreciate this opportunity to submit testimony to the Subcommittee on Energy and Water Development on water resources projects of the Army Corps of Engineers and the Bureau of Reclamation to be funded by the Administration budget for Fiscal Year 1986.

I have long held that prudent development of our water resources is essential for the future, especially in states such as Texas where geographical conditions lead to extensive flooding in some areas and extreme drought in others. These problems are exacerbated when regions and cities experience rapid growth, as many are in Texas.

I am a proponent of reduced Federal spending. I believe that we must work toward a balanced budget and reduce the deficit. But at the same time we must protect our investments and we must plan for the future. This is more critical in the area of water resources than many others.

I support the President's budget request for Fiscal Year 1986 for each of the Texas projects. But before I move to discussion of several specific Texas projects, I want to note that the Administration's budget for the civil works program of the Army Corps of Engineers appears almost identical to the appropriated spending levels for that program in Fiscal Year 1985. I would point out that it assumes the passage of legislation providing for increased non-Federal participation in project construction, operation and maintenance.

Beyond that, it assumes the passage of specific legislation developed by the Administration to recover $470 million from non-Federal sources. If such legislation does not become law, the budget now under consideration by this subcommittee is $470 million short.

This is not the forum for a detailed discussion of the merits of the Administration's cost-sharing proposal or any other cost-sharing proposal. That is a matter to be addressed by the Finance Committee and the Committee on Environment and Public Works. I serve on both of those committees and I expect to take an active role in the development of any new water resources cost-sharing methodologies. But I do want to bring to the attention of this Subcommittee the very real possibility that the project funding in the Administration budget may prove to be inadequate.

It is said that the true viability of water projects will be tested and proven through the imposition of increased non-Federal cost-sharing on those projects. I believe there is some merit to this claim. Certainly the sponsors of the five Texas projects included in the Administration's budget for new-start construction have great confidence that their projects will provide benefits far in excess of their costs. They are so confident that they have demonstrated a willingness to contribute up to fifty percent of construction costs. You could hardly have stronger testimony to the merits of these projects.

New Starts

I am pleased to see that $400,000 is being requested for planning and engineering of the Sims Bayou project in south Houston. This flood control project is badly needed in this predominately urban area.

The new construction starts which I referred to earlier are Clear Creek, Lake Wichita, Holliday Creek at Wichita Falls, and two separate elements of the Freeport Harbor project.

The Town Bluff Hydropower project is also included, but this is not really a new start. The existing Town Bluff Dam was authorized in 1945 and completed in 1951. Hydropower has always been an authorized purpose of this project, and recent studies have indicated that the installation of hydropower is still economically feasible. Local sponsors are willing to pay for construction by the Corps of Engineers. No Federal funding is required. The project sponsors are providing $3,240,000 in Fiscal Year 1986 to the Corps to begin construction and to repay the Federal Government amounts previously spent on engineering and design.

Clear Creek will provide flood protection for a rapidly developing residential and commercial area southeast of Houston. Local sponsors have agreed to pay 35 percent of the costs of the project, which is funded at $2 million in the President's budget.

The Lake Wichita Dam and Holliday Creek channel will furnish flood protection in the area of Wichita Falls. While not yet authorized by Congress, project sponsors have agreed to contribute 35 percent of project costs. I expect authorizing legislation to be enacted later this year, hopefully prior to the FY86 appropriations bill so that this project could be straightforwardly included in the appropriations legislation.

With regard to Freeport Harbor, there is $2.4 million in this budget to begin the relocation of the north jetty, which is badly deteriorated, and $2 million for initiation of rehabilitation of the south jetty. In this case, project sponsors have voluntarily agreed to contribute half the estimated cost. Under traditional cost-sharing, the non-Federal share of the project would have been much less, but

sponsors are so convinced of the viability of Freeport Harbor that they are willing to contribute increased funding.

Construction

I want to mention in some detail the continuation of construction on five Corps of Engineers projects: Cooper Lake, the Corpus Christi Ship Channel, Joe Pool Lake, Ray Roberts Lake, and Taylors Bayou.

For some years construction at Cooper Lake was delayed by court action. Now the injunction has been lifted, and the Corps budget includes $3 million for construction. Cooper Lake is essential to supply water to much of Northeast Texas. The project is also badly needed to reduce flooding in the South Sulphur River area. The requested funds will be used for engineering and design, continued relocation of utilities, completion of an access road, and a number of other activities.

The Corpus Christi Ship Channel is funded at $9.6 million. This will be used to continue deepening of the channel to forty-five feet, which is essential to the operation of this important navigation project.

Construction funding of $7.8 million is provided for Joe Pool Lake in Dallas County. This project, now 74 percent complete, is a vital element in the plan for improvement of the Trinity River Basin. The money will be used principally for land acquisition, road relocation, embankment construction and recreation facilities.

Ray Roberts Lake in Denton County is another component of the Trinity River Basin plan. The Corps budget includes $52 million for this project to supply flood control, water supply and recreation for the area. Most of the amount will be expended for continued land acquisition, relocations and completion of the dam.

The Taylor's Bayou drainage and flood control project will benefit the city of Beaumont. Most of the $4.8 million in the President's budget will be used to begin enlargement of a discharge channel and rectification of another channel to improve drainage.

I want to mention one project not included in the budget. The Wallisville Lake project is a saltwater barrier, recreation and water supply project at the mouth of the Trinity River in Chambers and Liberty Counties. Construction has been delayed because of a court injunction involving environmental questions. Should this injunction be lifted, I would hope that funding will be provided so that construction can be continued.

Operation and Maintenance

I recommend to the Committee all the operating and maintenance funds included in the Fiscal Year 1986 budget for Texas projects. I note in particular that the Sabine-Neches Waterway, funded at $6.9 million, is essential to the port of Beaumont.

Studies

Another project which I strongly recommend is the Liberty channel component of the ongoing Trinity River project study. The budget contains $500,000 for Phase II studies by the Fort Worth District. Local sponsors have begun to secure land for spoil and flowage easements, and funds exist to adequately dredge the existing channel during the coming fiscal year. I encourage the pursuit of advanced engineering and design for the extension of this channel, which will be needed in the near future.

Bureau of Reclamation

I support funding for all of the Texas projects listed in the President's budget. Because of fiscal constraints facing this nation, I am not asking for increased funding for any of these projects. I also support the funding requested for each of the Bureau of Reclamation projects, and cite in particular the $395,000 requested to continue feasibility studies for the Bedias Reservoir Project, an important component of the Trinity River Basin plan.

STATEMENT OF U.S. REPRESENTATIVE JACK BROOKS FROM TEXAS

MR. CHAIRMAN, THANK YOU FOR THE OPPORTUNITY TO APPEAR TODAY TO URGE THE SUBCOMMITTEE'S FAVORABLE CONSIDERATION OF THE PUBLIC WORKS PROJECTS FOR THE NINTH CONGRESSIONAL DISTRICT OF TEXAS INCLUDED IN THE FISCAL YEAR 1986 BUDGET.

MR. CHAIRMAN, I SUPPORT FUNDING THOSE ITEMS INCLUDED IN THE BUDGET PROPOSAL AND IN THE INTEREST OF TIME WILL SUBMIT A LIST OF THEM WITH MY STATEMENT RATHER THAN DISCUSS EACH ONE INDIVIDUALLY.

IN ADDITION, I AM REQUESTING THAT ONE PROJECT - HILLEBRANDT BAYOU AND TRIBUTARIES - AUTHORIZED BY THE HOUSE PUBLIC WORKS COMMITTEE LAST YEAR, BUT NOT INCLUDED IN THE BUDGET FOR FISCAL YEAR 1986, BE FUNDED TO THE FULL EXTENT OF THE CORPS OF ENGINEERS' CAPABILITY, WHICH IS $250,000. THIS STUDY PROJECT IS A NECESSARY ADJUNCT TO THE TAYLORS BAYOU FLOOD CONTROL AND DRAINAGE PROJECT, WHICH IS NOW UNDER CONSTRUCTION.

ALSO, MR. CHAIRMAN, THE TEXAS CITY CHANNEL PROJECT FOR THE CONTINUATION OF PLANNING AND ENGINEERING WITH REFERENCE TO DEEPENING THE CHANNEL TO 50 FEET WAS DELETED FROM THE BUDGET THIS YEAR. THE CORPS OF ENGINEERS HAS A CAPABILITY OF $400,000 WHICH WOULD ALLOW THEM TO CONTINUE THE STUDY. I WOULD APPRECIATE THE SUBCOMMITTEE'S KIND CONSIDERATION OF ADDING THIS ADDITIONAL AMOUNT.

I AM PLEASED TO REPORT THAT THE PRESIDENT'S BUDGET CONTAINS $2,000,000 FOR NEW CONSTRUCTION ON THE CLEAR CREEK FLOOD CONTROL PROJECT. THE CORPS OF ENGINEERS HAD BEEN STUDYING WAYS TO SOLVE THE PROBLEM FOR ABOUT 20 YEARS. AT LAST, WITH THE ENTHUSIASTIC SUPPORT OF THE LOCAL SPONSORS, INCLUDING THE CITY OF FRIENDSWOOD, HARRIS COUNTY, CLEAR CREEK DRAINAGE DISTRICT, THE COUNTIES OF GALVESTON, BRAZORIA AND FORT BEND, A PLAN HAS BEEN CREATED AND IS READY TO BE IMPLEMENTED. IT IS MY HOPE THAT THE SUBCOMMITTEE

WILL APPROPRIATE THE AMOUNT INCLUDED IN THE PRESIDENT'S BUDGET SO THAT WORK CAN BE STARTED AS QUICKLY AS POSSIBLE.

MR. CHAIRMAN, AS USUAL, I CANNOT TESTIFY BEFORE YOU WITHOUT MENTIONING THE WALLISVILLE SALTWATER BARRIER PROJECT WHICH HAS BEEN UNDER INJUNCTION AS A RESULT OF ENVIRONMENTAL PROBLEMS. THE CORPS OF ENGINEERS AND THE LOCAL SPONSORS - THE CITY OF HOUSTON, TRINITY RIVER AUTHORITY AND THE CHAMBERS- LIBERTY COUNTIES NAVIGATION DISTRICT - HAVE FILED MOTIONS IN FEDERAL COURT ASKING FOR THE LIFTING OF THE ENVIRONMENTAL INJUNCTION. SHOULD THE INJUNCTION BE LIFTED, AND THE CORPS OF ENGINEERS EXPRESS A CONSTRUCTION CAPABILITY, I WOULD URGE YOU TO FUND THIS PROJECT.

MR. CHAIRMAN, AGAIN I APPRECIATE YOUR KIND CONSIDERATION. ALL OF US ARE AWARE OF AND APPRECIATE THE BUDGET CONSTRAINTS YOU ARE UNDER IN ORDER TO ASSIST IN REDUCING OUR TREMENDOUS DEFICIT; HOWEVER, ALL OF THESE FEDERAL PUBLIC WORKS PROJECTS ARE CRITICAL TO THE ECONOMIC DEVELOPMENT OF MY DISTRICT WITH ITS MANY PETROCHEMICAL PLANTS AND HEAVY INDUSTRIAL OPERATIONS SO VITAL TO OUR COUNTRY. PORTS ALONG THE TEXAS GULF COAST ARE AN INTEGRAL PART OF THE ECONOMY OF THE NATION. THESE PROJECTS INSURE THE PRODUCTIVITY AND GROWTH OF THAT AREA AND HELP TO REMOVE THE EVER-PRESENT THREAT OF FLOODING AND ITS TRAGIC EFFECTS.

I HAVE WITH ME TODAY A NUMBER OF PERSONS VITALLY CONCERNED WITH THESE PROJECTS. THEY ARE HERE TO SUPPORT THESE STATEMENTS AND TO ANSWER ANY QUESTIONS THE SUBCOMMITTEE MAY HAVE. I WOULD LIKE TO INTRODUCE THEM AT THIS TIME...

<u>CITY OF FRIENDSWOOD</u>

MAYOR RALPH L. LOWE
COUNCILWOMAN JAN JORDAN
COUNCILWOMAN EVELYN NEWMAN
COUNCILMAN BOB WICKLANDER

CITY OF LEAGUE CITY

COUNCILMAN JOE LAMB
COUNCILMAN ED POOL
COUNCILMAN JEFF MALLIOS
COUNCILMAN CHESTER DAVIS

COUNTY OF GALVESTON

JUDGE RAY HOLBROOK AND MRS. HOLBROOK
COMMISSIONER FRANK CARMONA
COMMISSIONER RON CROWDER
COMMISSIONER BILLY JACK PEGUES

CHAMBER-LIBERTY COUNTIES NAVIGATION DISTRICT

SECRETARY OF THE BOARD CHARLES HILL

CLEAR CREEK DRAINAGE DISTRICT

PRESIDENT CHARLES G. HOOKS
VICE-PRESIDENT CARL L. SMITH

GALVESTON COUNTY DRAINAGE DISTRICT #1

SECRETARY ARTHUR AUTRY

JEFFERSON COUNTY DRAINAGE DISTRICT #3

CHAIRMAN LEROY MCCALL, JR.

JEFFERSON COUNTY DRAINAGE DISTRICT #6

PRESIDENT SAM O. SMITH
COMMISSIONER JOSHUA W. ALLEN, SR.
GENERAL MANAGER RONNIE PLATT AND MRS. PLATT

JEFFERSON COUNTY DRAINAGE DISTRICT #7

CHAIRMAN EUGENE RASHETA
COMMISSIONER M.J. "DUFFY" ADAIR
COMMISSIONER JULIAN B. COGHILL
COMMISSIONER GLENN DECUIR AND MRS. DECUIR
COMMISSIONER JOE LYDAY AND MRS. LYDAY
MANAGER TOM HOGAN

I ALSO SUBMIT FOR THE CONSIDERATION OF THE SUBCOMMITTEE STATEMENTS IN SUPPORT OF THESE PROJECTS FROM THE FOLLOWING:

CITIES OF:

BEAUMONT
DICKINSON
FRIENDSWOOD
GALVESTON
GROVES
LEAGUE CITY
NEDERLAND
PORT ARTHUR
TEXAS CITY

COUNTIES OF:

CHAMBERS
GALVESTON
JEFFERSON

PORTS OF:

BEAUMONT
GALVESTON
PORT ARTHUR

CHAMBERS OF COMMERCE OF:

BEAUMONT
PORT ARTHUR

BEAUMONT NAVIGATION DISTRICT
COASTAL SOIL AND WATER CONSERVATION DISTRICT
HARRIS COUNTY FLOOD CONTROL DISTRICT
CLEAR CREEK DRAINAGE DISTRICT
GALVESTON COUNTY DRAINAGE DISTRICT NO. 1
JEFFERSON COUNTY DRAINAGE DISTRICTS NOS. 3, 6, AND 7
D. P. WHEAT, JR.

NINTH DISTRICT, TEXAS PROJECTS
FY 1986 FUNDING REQUESTS
(Amounts in $ Thousands)

Project or Study	President's FY 1986 Budget	Corps' Capability	JB's Request
SURVEYS:			
Dickinson Bayou	$ 250	$ 250	$ 250
Galveston Bay Area Navigation	230	230	230
Hillebrandt Bayou & Tributaries	0	250	250
CONTINUATION OF PLANNING AND ENGINEERING:			
Texas City Channel (50' Project)	0	400	400
CONSTRUCTION:			
Clear Creek	2,000	2,000	2,000
Taylors Bayou	4,800	4,800	4,800
OPERATION AND MAINTENANCE:			
Galveston Harbor and Channel	6,365	7,365	7,365
Gulf Intracoastal Waterway	12,380	15,030	12,380
Houston Ship Channel	6,330	6,480	6,330
Sabine-Neches Waterway	6,900	7,850	7,850
Texas City Channel	2,480	2,480	2,480
Wallisville Project-Trinity River	245	245	245

STATEMENT OF U.S. REPRESENTATIVE J.J. PICKLE FROM TEXAS

MR. CHAIRMAN. I wish to briefly reiterate to this Committee my interest and strong support for both our energy and water development projects which are being considered today.

The energy drain on this country continues even without interference from foreign nations on our supply of oil. This country made a commitment to become energy self-sufficient, and we have made great strides in that direction. One area under considerable research and development at my own University of Texas is the fusion energy program. Last year the Congress had to cut back funding for fusion research, and over the past two years, the program has been reduced by $80 million. This year we have received a recommended budget level of $390 million. I believe this is a figure we can live with and still continue to make real progress in fusion research. I believe a further reduction would endanger our ability to make progress in this important area. I urge the Committee's support for the President's request for fusion.

Another topic I would like to mention before this Committee is my great concern for a flood control project in Austin, Texas. Boggy Creek has been in every authorization and appropriations legislation passed by the Congress in recent memory, yet the Congress and the White House have been unable to come to terms with passage of a Public Works bill. While some Members may cry "pork barrel" every time we try and advance this important legislation, people back home are losing their homes and property to floods that could have been totally avoided had we acted responsibly years ago.

Each day when I drive to the Capitol, I pass the Tidal Basin which is now surrounded by our beautiful Cherry Blossoms. The Cherry Blossoms are a true sign that Spring has come once again. However, Spring also brings rain which oftentimes results in floods. And, small meandering creeks such as Boggy will rise again from their banks and flood the homes and schools, playgrounds and parks, devastating property and threatening lives. This has become an annual occurrence in Austin, Texas and the people who are hit by these floods again and again are looking to this Committee and this Congress for help.

This story is repeated over and over again around the United States in cities and towns of all sizes. Funding for our Public Works Infrastructure is an investment in America and in the quality of life of our children and grandchildren. We must address this important issue. I pledge my support for your efforts in our behalf.

Thank you.

STATEMENT OF NEDERLAND, TEX.

...ise that the City of Nederland is situated in the Ninth Congressional District, Texas, and recommends your consideration of FY 1986 Budget appropriations for the following projects:

PROJECT	FY 1986 BUDGET
Clear Creek (Construction)	2,000,000
Dickinson Bayou (Adv. Eng. & Design)	250,000
Galveston Bay Area Navigation (Study)	230,000
Galveston Harbor & Channel (Oper. & Maint.)	6,365,000
Gulf Intracoastal Waterway (Oper. & Maint.)	12,380,000
Houston Ship Channel (Oper. & Maint.)	6,330,000
Sabine-Neches Waterway (Oper. & Maint.)	6,900,000
Taylors Bayou (Construction)	4,800,000
Texas City Channel (Oper. & Maint.)	2,480,000
Wallisville (Oper. & Maint.)	245,000

Your consideration of these recommendations is appreciated.

RESOLUTION OF DICKINSON, TEX.

A RESOLUTION OF THE CITY OF DICKINSON, TEXAS, SUPPORTING THE CORPS OF ENGINEERS' STUDY OF FLOOD CONTROL MEASURES ON DICKINSON BAYOU.

WHEREAS, major flooding has occurred along Dickinson Bayou and surrounding areas causing thousands of residents to live with a constant threat of more flooding; and

WHEREAS, extensive construction and development has taken place in this area since the last study by the Corps of Engineers of a benefit-to-cost ratio of a flood control project on Dickinson Bayou; and

WHEREAS, the Honorable Senate and House Energy and Water Development subcommittees are considering allocation of funds; and

WHEREAS, the City of Dickinson is seeking adequate appropriations for the continued study by the Corps of Engineers of flood control measures on Dickinson Bayou; and

WHEREAS, it is imperative that a new determination be made regarding the benefit-to-cost ratio of a flood control project on Dickinson Bayou; and

WHEREAS, we urgently request that $250,000.00 be approved and designated to continue this study;

WHEREAS, the City Council of the City of Dickinson met in open session on March 26, 1985, and voted unanimously to approve this resolution;

NOW THEREFORE BE IT RESOLVED that the City of Dickinson, Texas, requests assistance and allocation of funds to complete the Corps of Engineers study of flood control measures on Dickinson Bayou.

PASSED AND APPROVED this the 26th day of March, 1985.

Joseph F. Molloy
Mayor

STATEMENT OF CHAMBERS COUNTY, TEX.

Chambers County requests that the Wallisville (operation and maintenance) Project funding remain included in the FY 1985 Budget.

The Wallisville Project is of great importance to Chambers County and should be considered in the top priority group for funding.

The continued funding of the Wallisville Project for operation and maintenance will result in the preserving and continued upkeep of the existing property and facilities.

Proper care and maintenance will protect the condition of the existing property when funds become available for completion under the Project Plans. When completed, the Project will be a great benefit for Chambers County.

STATEMENT OF JEFFERSON COUNTY (TEX.) FLOOD CONTROL PROJECT COMMITTEE

Thank you for allowing me the opportunity to make this statement in support of the Taylor's Bayou Flood Control Project. I represent a Citizens' Committee which successfully passed a bond issue election in 1979 for $15 million, as the major part of our local share of the project. Please consider the following:

1. Over $39 million in damages to homes, businesses, roads, and crops occurred as a result of two severe floods in 1979.

2. The local share is committed and the bonds are sold.

3. A favorable public hearing on the Environmental Plan was held in December, 1980, and resulted in no major changes in the design.

4. The project has been under construction for the past two years, and the funds requested this year will substantially complete the First Phase and eliminate a serious bottleneck at the outfall.

5. I am for reducing Federal Expenditures and balancing our budget; however, Federal funds always seem to end up in flood disaster areas to help cover losses in the form of flood insurance payments, low interest loans, and grants. The same funds should be spent to prevent the loss, when possible.

This fund request should be considered as an investment in the future of the petrochemical center of our nation. Further development in our area is hampered by inadequate drainage. I urge your support of this item in the Appropriations Bill for Water Development in Texas.

STATEMENT OF CLEAR CREEK (TEX.) DRAINAGE DISTRICT

The Clear Creek Flood Control Project is an absolute necessity to the health, safety, and well-being of the people who live in the Clear Creek watershed. As the land in the watershed has undergone development, pastures and farmland have been converted to parking lots, streets, runways, buildings, and other surfaces from which rain water runs off extremely rapidly. Although there have been, and continue to be, improvements made to drainage arteries in the region by local agencies, consistent with their resources, and although storm water run-off and flood plain control has been in effect in the counties of the Clear Creek watershed since 1979-80, the effects of land development and subsidence have already reached the point that Clear Creek simply cannor carry storm water away to Galveston Bay fast enough to keep water out of our homes. So, until Clear Creek is improved in its water handling capacity, we do not have the ability to make substantial improvement to the flood hazards that our citizens are living with every day.

People here realize that it is not feasible to prevent flooding by a storm like Claudette which struck this area in July, 1979, and dropped 30-40 inches of rain on us in a two-day period. However, our people are getting water in their homes when much less spectacular rains occur -- five-year to ten-year frequency precipitation is causing flooding. Even those people who are not getting water in their homes are impacted: street flooding is so severe that emergency vehicles cannot get through. A fire or serious medical problem occuring during, or for many hours after, such rains, would go unanswered in many places

The Corps of Engineers have devised a plan for improving Clear Creek that is economically sound (benefit to cost ratio of 1.27), environmentally acceptable, and will completely contain the watershed run-off for a ten-year frequency storm. Furthermore, the 100-year flood plain will be reduced by 25% overall in the watershed, and by as much as 75% in some portions of the watershed. This plan has been presented to the public in this area, and has received overwhelming support. This represents an increase in public support during the last two years. One example of this support is the donation of Right-Of-Way land for the Clear Creek Project. The Corps of Engineers District Office in Galveston, Texas, and the Southwest Division Office in Dallas, Texas, have both approved the project design. We fervently hope that appropriation of construction funds will be approved and included in the FY-1986 Budget. The project is not frivilous, nor a convenience type of improvement--it deals with people's safety and health, both physical and psychological. Many of our people fear rain; anxiety levels run very high when a heavy rain last more than a couple of hours, especially when water starts to rise in the streets and into people's yards!

Gentlemen, we NEED the Clear Creek Project and respectfully request that the construction funding be included in the FY-1986 Budget.

CLEAR CREEK DRAINAGE DISTRICT

GALVESTON COUNTY, TEXAS

RESOLUTION NO. 85-2

A RESOLUTION ENDORSING THE U. S. ARMY CORPS OF ENGINEER'S CLEAR CREEK FLOOD CONTROL PROJECT, STATE OF TEXAS: AND URGING THE UNITED STATES CONGRESS TO FUND CONSTRUCTION OF THE PROJECT IN THE FY-86 BUDGET

WHEREAS, the Clear Creek Watershed includes portions of Galveston County as well as parts of Harris County and Fort Bend County, and

WHEREAS, a serious flood problem exists in the Clear Creek Watershed where existing residential and commercial areas are subject to extensive damages from rising waters in Clear Creek and its tributaries, and

WHEREAS, the Clear Creek Drainage District is the agency responsible for flood control in those portions of Clear Creek and its tributaries within its District, and

WHEREAS, the taxpayers of the District made a substantial committment in 1982 to the concept of self-help by voting an increase in taxes for flood control, and

WHEREAS, in spite of the increased taxes, the amount by which the flood hazard in the District can be reduced without a major project to increase the flow capacity of Clear Creek is severely limited, and

WHEREAS, the scope of the work required to achieve the necessary improvements on Clear Creek requires the extensive technical/management resources that the Corps of Engineers can provide, and

WHEREAS, the cost of the improvements needed on Clear Creek far exceeds the financial capabilities of local entities, and

WHEREAS, the benefits of the Corps of Engineers Clear Creek Project would include substantial reductions in claims against the National Flood Insurance Program, and

WHEREAS, flood losses in the City of Friendswood, which lies within the boundaries of the Clear Creek Drainage District, has resulted in it being the eleventh highest community in the nation in terms of number of flood claims, and

WHEREAS, the residents in the District continue to experience economic loss as a result of unnecessarily frequent flooding, and

WHEREAS, the residents of the District continually suffer extreme mental anguish because of the frequent threat of flooding, as well as the flooding itself, and

WHEREAS, the Clear Creek Drainage District, within the limits of its resources, and with the cooperation of other local governmental agencies, as well as individual citizens who have donated their time and labor, has been clearing debris and executing structural improvement projects in the creeks to increase their capacity, and

WHEREAS, the United States Congress in 1968 authorized the U. S. Army Corps of Engineers to design a flood control project which would provide a significant measure of protection from recurring flooding problems in the Clear Creek Watershed, and

WHEREAS, the study has been completed and a consensus has been achieved by all local sponsors and entities and endorsed by the 67th Texas Legislature, and

WHEREAS, the project has been approved by the U. S. Army Corps District in Galveston and the Corps Southwest Division, and

WHEREAS, the President of the United States has requested Congress to approve $2 million to start construction of the Clear Creek Flood Control Project in the federal budget for fiscal year 1986, and

WHEREAS, further delays will significantly increase the cost of the project as well as the probability of additional flooding; now, therefore

BE IT RESOLVED BY THE BOARD OF SUPERVISORS OF THE CLEAR CREEK DRAINAGE DISTRICT OF GALVESTON COUNTY:

THAT the District reendorse the U. S. Army Corps of Engineers Clear Creek Flood Control Project, and

THAT the District urge the Congress of the United States to recognize that the Corps of Engineers Clear Creek Project is not a mere convenience item, but is absolutely necessary in order to restore the quality of life of thousands of people to a reasonable condition that they have every right to expect, and

THAT the District urge the Congress of the United States to approve the funds necessary for construction of the project in the FY-86 budget, and

THAT the District urge the Congress to take whatever additional action is necessary to expedite the project and thereby reduce the emotional, physical, and economic suffering due to flooding.

PASSED, APPROVED, AND ADOPTED THIS 12th DAY OF MARCH, 1985.

STATEMENT OF HARRIS COUNTY (TEX.) FLOOD CONTROL DISTRICT

I am James B. Green, Director of the Harris County Flood Control District, a political subdivision of the State of Texas, created by the State Legislature in 1937 after a series of disasterous floods had ravaged our area, threatening life and property.

The 1935 flood inundated two thirds of the County, took 15 lives, and so silted up the Houston Ship Channel that it took eight months to clear it so that it was safe for navigation.

It was as a result of that continued flooding threat that the U. S. Army Corps of Engineers constructed the Addicks and Barker Dams reservoir system in the western portion of Harris County, a system that still provides major protection to our area.

So it is, Mr. Chairman, that I appeal to you and the honorable members of this Committee to consider favorably the public works projects before you that will guarantee our continued protection from the ravages of future floods.

I come to you on behalf of Harris County Judge Jon Lindsay and the members of Commissioner's Court, who have supported the Clear Creek project since its inception in 1966, both by resolution and by their active participation. Without their encouragement and help, the Flood Control District would not have been able to carry out its own maintenance and improvement efforts in the watershed while awaiting for the Corps project to begin.

As you and most of your Committee may or may not know, Harris County is located on the flat coastal plains of our State in an area subject to heavy and intense annual rainfall and the annual threat of hurricanes and tropical storms. It is, in my professional opinion, one of the absolutely most difficult areas to drain and protect from flooding in the United States.

This is borne out by the fact that in 1979, for instance, the Houston metropolitan area accounted for an estimated 43 percent of all claims paid by the National Flood Insurance Program.

Mr. Chairman and honorable members of the Committee, I believe that each and every Federal dollar spent on flood control projects in our area will be paid back many times over in just the cost of Federal insurance and other aid that will be necessary if such projects as the Clear Creek construction proposed by the Corps of Engineers are not funded and completed.

Over a period of years, we have seen the truth of this wisdom borne out by looking back at the costs we have sustained in our area as a result of flooding and comparing those costs to what it would take to improve our channels adequately.

Mr. Chairman and members of the Committee, we have waited long and with much anticipation for the Clear Creek project to get underway. If every person who has sustained damages to their homes and property as a result of flooding along this waterway could be here today, I do not know where we could find a room large enough to hold the meeting.

In December of 1981, the Corps of Engineers completed their draft of the General Design Memorandum for this project. We looked at this as a milestone in providing cost-effective flood protection for the residents of Harris County and Galveston County to the south. Now a request for funding of first phase construction work by the Corps is before your Subcommittee. I ask you on behalf of the citizens of our area to act favorably and expeditiously upon this request.

The Clear Creek Watershed drains approximately 260 square miles of flat, coastal plain which has a maximum elevation of approximately 75 feet. Clear Creek and its 17 tributaries drain into Clear Lake and from there into Galveston Bay which is recognized as the largest and most important (economically and ecologically) bay system along the Texas Gulf Coast.

This is a rapidly growing urban area which includes the site of the National Aeronautics and Space Administration Johnson Space Center, a number of local branches of national aerospace corporations and contractors, the homes of the technical and professional people who staff those facilities, and a portion of the spillover of the petrochemical oriented businesses that line the Houston Ship Channel.

Mr. Chairman, let me reiterate the Corps' statement on Flood Damage Reduction contained in their General Design Memorandum draft: "Flooding is a serious problem in the Clear Creek Watershed. Throughout the watershed, Clear Creek meanders and has a small channel capacity relative to the areas drained; consequently, flooding is experienced at frequent intervals throughout the area. As the area continues to be urbanized, the flooding increases in intensity and frequency. The flow of floodwaters in the watershed is impeded by the relatively flat topography. Clear Creek and its tributaries are crossed by numerous bridges and pipelines which further restrict the passage of flood waters and increase flood stages."

"In the Clear Creek basin, there are about 19,000 acres of land subject to flooding by the 100-year storm. Most of this area is along the main channel with a smaller amount along the various tributaries. In the 100-year flood plain, approximately 12,300 acres or 65 percent is urban and built-up; the reamining 6,700 acres are distributed between agricultural (1,200), forest and wetlands (2,700), water bodies (1,600) and vacant and open space (1,200). The 100-year flood plain is delineated on Figures I-2 and I-3; this flooding is coincidental with a tidal elevation of two feet above mean sea level in Galveston Bay. The flood plain shown is based on detailed hydraulic studies of the area."

"The area's vulnerability to tropical storms and hurricanes is another factor that demands flood control needs. The widespread flooding that accompanied tropical storm "Claudette" in July of 1979 emphasized the seriousness of this situation. This storm, which caused in excess of $227.5 million dollars in total damages, is regarded as the worst in the area's history. Within the Clear Creek Watershed, over 5,000 structures were flooded and the total residential and commercial damages exceeded $90 million dollars. Major floods in 1973 and September of 1979 also caused substantial flooding and economic loss along Clear Creek."

Clearly, the Corps of Engineers has identified the need to reduce the flood damages now being sustained in the Clear Creek Watershed on a recurring basis.

Much time and effort has gone into the Federally funded work the Corps of Engineers has already done. I realize the amount requested for their construction project is not that substantial, relatively speaking, but let me assure you that the completion of their work will have an immensely substantial benefit to our community, our State and our Nation.

Mr. Chairman and Honorable members of the Committee, these Federal dollars spent today will <u>save</u> many more Federal dollars in years to come.

STATEMENT OF BEAUMONT NAVIGATION DISTRICT, TEXAS

SABINE-NECHES WATERWAY

The Beaumont Navigation District of Jefferson County, Texas is the local sponsor of the Sabine-Neches Waterway as authorized by Congress.

The Sabine-Neches Waterway is a federally maintained navigation project extending from the Gulf of Mexico, through a jettied entrance at the mouth of Sabine Pass, inland to the deepwater ports of Port Arthur, Beaumont, and Orange, Texas, a total distance of approximately 84 miles. The project included deep draft channels of the following dimensions; 42 feet deep and 800 feet wide across the Sabine Bank in the Gulf of Mexico; 40 feet deep and a varying width of 800 feet to 500 feet through the jetty channel; a depth of 40 feet and a width of 500 feet from the jetty channel to the Turning Basins at Port Arthur; a 40 foot depth and a 400 foot width from Port Arthur via the Sabine-Neches Canal and the Neches River to the Port of Beaumont; a 30 foot depth and a 200 foot width from mouth of Neches River upstream thru the Sabine River to the Port of Orange.

In addition to the above dry cargo ports, Mobile Oil Corporation, Texaco, Incorporated, Gulf Oil Company - U. S., American Petrofina Company of Texas and Union Oil Company of California have located their major refineries along this ship channel. These five refineries have a total rated processing capacity of 1,172,000 barrels of crude oil per day. This is approximately 12% of the nation's refining capacity. A great majority of this crude oil is imported by tankers through this waterway and the ports and energy related industries along this channel have billions of dollars invested in wharves, docks and plant installations. A recent survey reveals that an energy related industry expansion and replacement program of substantial size will be completed in the near future, and, other industries are expected to locate in this area within the next year.

In addition to providing crude oil to the local refineries, Sun Marine Terminals also furnishes others with considerable oil. The Department of Energy has invested in excess of 35 million dollars in Sunoco's Neches River facilities, not including the cost of a pipeline to the Hackberry Strategic Reserve Salt Dome oil storage terminal, nor does it include the development of the Big Hill Storage Terminal, the construction of which is underway. The majority of this commodity is foreign imported crude oil and the handling requires the use of many large tankers which further congest this already extensively used waterway.

All of the foregoing development is largely due to the existence of the Sabine-Neches Waterway, our area's life line to the world for its exports and imports.

This extensive and expanding complex comprises a critical basic energy related industry that is absolutely vital to the nation's economic and energy needs. Their diminution for any reason would have a deleterious effect nationally as well as regionally.

The Corps of Engineers found that in 1983, there was in excess of 55,000,000 tons of dry and liquid cargo shipping on this waterway, plus 40,000,000 tons of Gulf-Intracoastal traffic which also moved thru these channels. Shipping of this magnitude necessarily involves the use of a great many vessels which, of course, creates congestion on the waterway. To compound the problem, the present size of the grain ships, oil tankers and other cargo ships using this waterway are such that an even deeper and wider channel is badly needed.

Recent studies by the Corps of Engineers and complaints from the shipping industry reflect that there is serious siltation and shoaling in the Gulf entrance channel at Sabine, with extensive shoaling along several reaches of the inland channels. They find that these conditions will rapidly become worse, and, if not corrected, eventually the channel could be closed to deep sea navigation.

Correcting these conditions will decrease chances of collisions and groundings of the many hundreds of vessels carrying crude oil and refined products. Such occurences, as stated by the Corps of Engineers in their environmental impact report "would result in adverse environmental impact and public health hazards". Failure to maintain the channel would result in severe adverse economic effects on the project area, the state and the nation. Effects would include loss of

billions of dollars worth of facilities adjacent to the channel, loss of employment for thousands of people and disruption of the manufacture and transportation of a significant portion of the nation's "fossil fuel supply".

The Corps of Engineers' breakdown of the 6 million 9 hundred thousand dollars included in the proposed budget for F.Y. 1986 is as follows: $1,050,000 for dredging the Port Arthur Canal; $3,000,000 for dredging the Outer Bar and Jetty Channel; $950,000 for re-habilitating the levee along Sabine Lake South Disposal Area; $1,081,000 for removing shoals in Sabine-Neches Canal; $819,000 for administration, engineering, surveys, etc.

As the sponsoring agency, Beaumont Navigation District stands ready to provide all needed disposal land areas, rights-of-way, relocations and confining structures for this project.

The District, representing the above mentioned many ports, refineries, grain elevators and other shippers using this Waterway, supported by our Congressman, the Honorable Jack Brooks, respectfully request your favorable consideration for the inclusion of 6 million 9 hundred thousand dollars in the F.Y. 1986 budget, in order that this badly needed work can be accomplished.

TAYLORS BAYOU

The Beaumont Navigation District, as one of the sponsors of the Taylors Bayou Drainage and Flood Control Project is also responsible for the operation of the Navigation and Salt Water barrier gates near the mouth of Taylors Bayou.

Over a forty year period we have been in a position to observe the numerous artifical changes in the area that have adversely effected drainage of this stream.

The first set of existing gates were installed in 1937 and functioned as salt water barriers, not as flood gates. Later the J. D. Murphee Wildlife Management Area was created by constructing a system of levees along Taylors Bayou and the Intracoastal Canal restricting the natural course of flood waters across the wetlands into the Intracoastal and thence to the Gulf. Then in 1972, the Rhodair Gulley, Lakeside and Alligator Bayou pump stations of the Port Arthur Hurricane Protection System were installed. These pumps have a combined capacity of over two million gallons per minute and discharge into the lower reach of Taylors Bayou just above and below the salt water gates. These pumps operate during periods of flooding, raising the level of the Bayou which backs water up into homes and streets of Beaumont. State highway 73 running from Port Arthur west to Winnie is yet another obstruction to the traditional flow of water from the developed section of Beaumont toward the Gulf. During a rain of any magnitude, a one to three foot differential builds up on the North side of this highway, holding water on the developed areas of North Jefferson County.

Construction on Phase I is well advanced. The Outfall Canal and the Diversion Channel have been dredged and the Salt Water Barrier is 44% complete. Pipe Lines have been relocated and other work has been accomplished. Therefore, it is important that sufficient funds be provided to continue this urgently needed work before more costly damages are inflicted on the home owners and businesses of our community.

As one of the sponsoring agencies, Beaumont Navigation District stands ready to meet its commitments to furnish its share of the local assurances required.

The District, representing the people and industries of this district, and supported by our Congressman, the Honorable Jack Brooks, respectfully request that 4 million eight hundred thousand dollars be included in the F.Y. 1986 budget, in order that this highly important work be continued.

Statement of Galveston County (Tex.) Commissioners Court

Galveston County has been the local sponsor with the U.S. Corps of Engineers for the construction of various flood control projects in Galveston County since the first seawall was started in Galveston shortly after the 1900 Hurricane. The Galveston seawall has now been extended in length to approximately 10 miles protecting the most populated part of the City of Galveston.

In 1962 (some 14 years after the first local bond issue was passed), construction began on the seawall protecting the cities of Texas City and La Marque from the ravages of hurricanes and high tides of Galveston Bay. In addition, flood control projects have been initiated to prevent flooding along Highland Bayou in the cities of Hitchcock, Santa Fe, and La Marque, a project on which construction started in 1974, and along Clear Creek in the cities of League City and Friendswood in cooperation with Harris County and Brazoria County Drainage District No. 4, although no construction has yet begun. Galveston County is also the local sponsor for a re-study of the flooding problems on Dickinson Bayou, a bayou which flooded 1,000 homes in 1979.

We appear before this Honorable Committee to urge your support for appropriations for these projects which are not yet complete in Galveston County. We are specifically requesting appropriations for construction on Clear Creek, which is now ready for construction.

DICKINSON BAYOU

The Galveston County Commissioners Court is urging this Honorable Committee to approve $250,000 for the Corps of Engineers to continue the study of flood control measures on Dickinson Bayou. This is extremely important to Galveston County, inasmuch as over 1,000 homes were flooded along Dickinson Bayou during Tropical Storm Claudette in July of 1979 because of rains in the watershed area from 20 to 40 inches over a 24-hour period. This caused between $40,000,000 and $50,000,000 in damages along Dickinson Bayou, and Galveston County is anxious to act as a local sponsor to relieve the flooding conditions. A study was done in the mid-1970's by the Corps of Engineers that found an inadequate benefit-to-cost ratio. However, we believe that extensive construction and development and the possibility of another devastating flood will certainly change the benefits to be derived from flood control measures.

We are respectfully requesting that the $250,000 noted above, which is included in the Administration's budget, be approved so the Corps of Engineers can complete this study and we can finally determine if a flood control project on Dickinson Bayou has a favorable benefit-to-cost ratio. We hope you will agree that this study should be completed, and we sincerely hope you will favorably consider our request.

CLEAR CREEK FLOOD CONTROL PROJECT

The Galveston County Commissioners Court respectfully urges the Honorable Committee to authorize $2,000,000 in construction funds and approve a new construction start for the Clear Creek Flood Control Project. These funds are included in the Administration's budget, and we know that the U.S. Corps of Engineers is now ready to let a contract for the first phase of this project in the first or second quarter of FY 1986.

It is extremely important that the Clear Creek Flood Control Project begin construction in fiscal year 1986. After approximately 13 years of planning, the Corps of Engineers made final engineering decisions on this project in 1983 and has completed detailed engineering design for the first phase which is from Clear Lake to just west of Highway 3. The Design Memorandum has been submitted to the Division Office of the Corps of Engineers, and approval is expected in April. This project is designed to provide flood relief for over 500,000 people in the Clear Creek watershed in Galveston, Harris and Brazoria counties. It was also designed in such a way as to

protect the sensitive environment of Clear Creek, and this decision received overwhelming public support in a January, 1982, public hearing. The three local sponsors--Galveston County, Harris County, and Brazoria County Drainage District No. 4--support the Corps of Engineers design which will accommodate a 10-year flood with the remainder of the 100-year flood plain to be protected by flood plain management.

In 1979, over 2,000 homes in Friendswood and League City along Clear Creek were flooded twice, in July from Tropical Storm Claudette and again in September. Several thousand homes were also flooded in Brazoria and Harris counties. Losses from flooding in these three counties from the 1979 floods were well over $200,000,000. People are desperate to do something--almost anything--on Clear Creek, and the Corps of Engineers is trying to expedite this project.

Inasmuch as the Clear Creek Flood Control Project has been in the study and design stage for over 15 years (authorized in 1968), it is most urgent that construction start as soon as possible. Finally, the Administration is now recommending this new construction start, although the 35% local share is a terribly large burden for the three local sponsors to carry. The study has been a high priority by the Corps of Engineers and over $2,500,000 has already been spent. It would be disastrous to the people along Clear Creek if this project were shelved after all of the time, effort and money spent in detailed studies. We sincerely hope you will give every consideration to approving a new construction start on Clear Creek and authorize the Corps of Engineers to spend $2,000,000 in construction funds for the first phase of the project. Galveston County will make every effort to provide its local share of the cost.

Thank you for your consideration of these requests and for your time in allowing us to be present at these hearings. We stand ready to assist you in any way and to furnish any additional information you may require.

Statement of Beaumont (Tex.) Chamber of Commerce

On behalf of the Beaumont Chamber of Commerce, I respectfully urge your appropriation of funds for the following public works projects for inclusion in the FY 1986 budget:

- Sabine/Neches Waterway (operations/maintenance)	$ 6.9 million
- Taylors Bayou (construction)	$ 4.9 million
- Gulf Intracoastal Waterway (operations/maintenance)	$12.38 million

Senator Hatfield, all three projects have great importance to the economic future and existing transportation industry of Beaumont and Southeast Texas. Taylors Bayou is the major source for Beaumont drainage outfall - increased capacity in the bayou is essential to accommodate the seasonal rains which appear each year. The citizens of Beaumont have begun construction of twenty-two drainage improvement projects totaling $16 million whose success depend upon maximum capacity in Taylor's Bayou.

The Sabine/Neches Waterway is the heart of our shipping and transportation network and is the single greatest industrial and recreation asset to our region. The Gulf Intracoastal Waterway connects the Golden Triangle region with industry and provides access to communities throughout the coast.

I ask your favorable consideration of these projects.

Statement of Texas City, Tex.

On behalf of the City Commission and the citizens of Texas City we sincerely request your favorable support for adequate appropriations for the above listed projects pertaining to our City and neighboring communities that are all vitally intermingled for the benefit of all of the citizens of Galveston County.

We support the above projects entitled "Texas City Channel","Galveston Bay Area Navigation","and Galveston Harbor & Channel." The Port of Texas City now handles more than 41 million tons of shipping annually. The major cargos consist of raw and finished products to and from our multi-billion dollar petro-chemical industries. The economic life of our community and county depends to a large degree upon the industries who use the port and the many supporting service and retail businesses.

Residents in Texas City, Dickinson and Clear Creek areas have been flooded repeatedly because of heavy rainfall. Any relief in the form of construction funds for deepening and widening of bayous and creeks would help all the citizens in this area. We urge your support of the"Clear Creek (Construction)" and the "Dickinson Bayou (Adv. Eng. & Design)."

Should you have any specific questions pertaining to these projects, we will be most willing to cooperate in providing any information we have available for the use of your committee.

Statement of Beaumont, Tex.

On behalf of the City of Beaumont, we respectfully request you and your Committee to grant on-going construction funds for the Taylor's Bayou drainage and flood control project. We recognize and appreciate your past assistance and urge you to continue the funding of this important project.

The requested amount for this year, $4.8 million, will assist in proceeding with a project that has been recognized as necessary since the late 1940's.

The City has experienced severe flooding on several occasions over the last thirty years. Although the Taylor's Bayou project will not solve flooding problems in Beaumont entirely, it will substantially improve flood control by opening a bottleneck of levees and canals. About 60 percent of Jefferson County's storm waters gravitate naturally to Taylor's Bayou. In 1979 and 1980 floods caused about $46 million worth of damage in Jefferson County.

The City and its people have not only supported the project by asking for Federal money but also have passed over $35 million in bond issues to support the area's drainage plans. Clearly, this project is essential to help protect our homes and businesses from the damaging floodwaters that have afflicted them over the last decades.

We appreciate the efforts of Congressman Jack Brooks on our behalf and lend our support to the $6.9 million requested this year for the operation and maintenance of the Sabine-Neches Waterway. This ship channel is essential to our Port, an integral part of our economy.

Thank you for your time and consideration of these projects.

STATEMENT OF JEFFERSON COUNTY (TEX.) COMMISSIONERS COURT

The Commissioners' Court of Jefferson County, Texas, would like to go on record in support of the following projects which pertain to Jefferson County and will be presented by Congressman Jack Brooks on Wednesday, April 3, 1985:

(1) Sabine-Neches Waterway
(2) Taylors Bayou
(3) Gulf Intracoastal Waterway

It is our opinion that said projects should be included in the 1986 budget as these projects are vital to our area and are in the best interest of the citizens of Jefferson County.

STATEMENT OF PORT OF BEAUMONT, TEX.

The Port of Beaumont Navigation District of Jefferson County, Texas strongly supports that item in the budget for public works for fiscal year 1986 which proposes a total of $6,900,000 for the continued operation and maintenance of the Sabine-Neches Waterway. We respectfully urge favorable consideration and action by your committee.

The Port of Beaumont Navigation District of Jefferson County, Texas is the agency which operates and maintains the public wharves of the Port of Beaumont.

Proper maintenance of this waterway is absolutely essential if the marine terminals with facilities located on this ship channel are to continue operating maximum efficiency. We respectfully urge your committee to approve the requested funds.

STATEMENT OF JEFFERSON COUNTY (TEX.) DRAINAGE DISTRICT NO. 3

Work on the Taylor's Bayou Drainage and Flood Control Project has continued to progress for several years and during that period of time a great deal has been accomplished. The citizens and residents of this area are anxiously awaiting the day when we can say that the project has been completed.

Congressman Jack Brooks has worked untiringly for many years in support of our project, and if it had not been for his efforts, we would not be at the point we are today.

At this time, the acquisition of rights of way, spoil disposal areas and the completion of the channel enlargement has been accomplished, and the Corps of Engineers has begun construction on the salt water barrier, which is a vital and necessary link in our overall flood control project.

Jefferson County Drainage District No. 3 has been advised that $4.8 million has been allocated in the currently proposed budget for continued work on this project, which is of vital importance to the residents of this area. Jefferson County Drainage District No. 3 is requesting your support and assistance in having this amount included in the budget for the fiscal year 1986.

43-631 O - 86 - 21

Statement of Greater Port Arthur (Tex.) Chamber of Commerce

TAYLORS BAYOU CONSTRUCTION

We, the Directors of the Greater Port Arthur Chamber of Commerce, request approval of the $4,800,000 appropriation for the Taylor's Bayou Construction Project for fiscal year 1986.

This project dates back to 1946, and as you well know construction costs have soared since that time. We feel that this will benefit our community, not only from an economic standpoint but also from a drainage standpoint. It is essential that drainage protection be provided for our area.

Therefore, we respectfully urge your committee to approve funds proposed for the forthcoming fiscal year.

SABINE-NECHES WATERWAY

We, the Board of Directors of the Greater Port Arthur Chamber of Commerce, request approval of the $6,900,000 appropriation for the operation and maintenance of the Sabine-Neches Waterway for fiscal year 1986.

Our area is of significant importance to the Nation by the fact that more than 10% of the Nation's refined petroleum products are transported through our complex of refineries. Today, refineries are relying more and more on larger and greater numbers of tankers to bring in vitally needed imported crude and to handle export and domestic shipments as well.

We respectfully request your favorable consideration to the request for $6,900,000 for the operation and maintenance of the Sabine-Neches Waterway for fiscal year 1986.

GULF INTRACOASTAL WATERWAY

We, the Board of Directors of the Greater Port Arthur Chamber of Commerce, request your favorable consideration of the $12,380,000 appropriation for the operation and maintenance of the Gulf Intracoastal Waterway for the fiscal year 1986.

The Gulf Intracoastal Waterway of Texas is an indispensable link between area refineries, chemical and petrochemical plants, all of which are absolutely essential to the security as well as the economical well being of our Nation today.

Few, if any, waterways in America contribute more to the American economy, to our strengthened relations with a peaceful world, and toward achieving a better balance of trade than the Gulf Intracoastal Waterway of Texas.

We, therefore, respectfully request your favorable consideration of this $12,380,000 appropriation.

STATEMENT OF JEFFERSON COUNTY (TEX.) DRAINAGE DISTRICT NO. 6

The Taylors Bayou Drainage and Flood Control Project, a joint local-federal effort, is moving ahead on schedule to help in resolving many drainage and flooding problems long suffered by people living in Jefferson County. This success is the result of individual efforts by our own Congressman, The Honorable Jack Brooks, and by your able leadership and willingness to support worthwhile projects of this nature.

Since actual work began two (2) dredging contracts have been either totally or nearly completed, a salt water barrier is under construction, and a contract for widening of the Gulf Intracoastal Water Way is planned for letting in late fall. These four contracts will complete Phase I of the Project.

Phase II is well underway with the acquisition of right of way and spoil disposal areas plus the purchase of mitigation land to satisfy the requirements set forth by environmental interests. This phase of the project has been accomplished with local funds.

It is our understanding that $4.8 million has been allocated in the current proposed federal budget for continued work on this project. The District wholeheartedly supports this allocation and earnestly request your support and assistance in having this amount in the adopted budget.

The District also supports the funding request for the Sabine-Neches Waterway (O & M) in the amount of $6.9 million and the Gulf Intracoastal Waterway (O & M) in the amount of $12.3 million.

The Taylors Bayou Drainage and Flood Control Project as an ongoing project offering flood relief to many citizens of Jefferson County and Beaumont, Texas has long been supported by citizens of the area.

To further implement its effectiveness and provide even more much needed protection, the Hillebrandt Bayou and Tributaries Reconnaissance Study by the U.S. Corps of Engineers is required to extend these benefits to the more densely populated areas of West Beaumont. Inclusion of funding for $250,000.00 for this study in the Fiscal Year 1986 Federal Budget is vital to providing the flood protection needed for this area and to fully utilize the Taylors Bayou Project.

Your active support in obtaining funding for these projects is greatly appreciated.

RESOLUTION OF GROVES, TEX.

WHEREAS, the Groves City Council supports the following public works projects that Congressman Jack Brooks will present before the House Committee on Appropriations and Senator Lloyd Bentsen will present before the Senate Committee on Appropriations for funding in the FY 1986 Budget:

a)	Clear Creek (Construction)	$ 2,000,000
b)	Dickinson Bayou (Advance Engineering & Design)	250,000
c)	Galveston Bay Area Navigation (Study)	230,000
d)	Galveston Harbor & Channel (Operation & Maintenance)	6,365,000
e)	Gulf Intracoastal Waterway (Operation & Maintenance)	12,380,000
f)	Houston Ship Channel (Operation & Maintenance)	6,330,000
g)	Sabine-Neches Waterway (Operation & Maintenance)	6,900,000
h)	Taylors Bayou (Construction)	4,800,000
i)	Texas City Channel (Operation & Maintenance)	2,480,000
j)	Wallisville (Operation & Maintenance)	245,000

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GROVES, TEXAS:

THAT this body does hereby go on record as wholeheartedly supporting the above projects for funding in the FY 1986 Budget; and

BE IT FURTHER RESOLVED that a copy of this Resolution be furnished Congressman Jack Brooks, Senator Lloyd Bentsen, and members of the House and Senate Committees on Appropriations as evidence of the Groves City Council's support.

PASSED, APPROVED and ADOPTED this 11th *day of March, 1985.*

Sylvester Moore

Sylvester Moore, Mayor

ATTEST:

Gene K. Graham

Gene K. Graham, City Clerk

STATEMENT OF PORT ARTHUR, TEX.

TAYLOR'S BAYOU (CONSTRUCTION)

The City of Port Arthur fully supports the request of Jefferson County Drainage District #6 for the Fiscal Year 1985 for $4,800,000, to plan for the construction of flood control on Taylor's Bayou, which drains the largest watershed area in Jefferson County.

Serious drainage problems in Beaumont and in the extraterritorial area of Port Arthur have caused major damage by the flooding of this Bayou. The flooding was caused by the normal development of the upper watershed area and heavy rains this past year.

The City of Port Arthur wishes to go on record in support of this flood control project and encourages you to approve funds for the continuation of this project.

SABINE-NECHES WATERWAY (OPERATION AND MAINTENANCE)

The City of Port Arthur would like to go on record for approval of the Fiscal Year 1985 funds, $6,900,000, as requested by our Honorable Congressman Jack Brooks.

The economic wellbeing of all citizens in Southeast Texas and this Nation is dependent upon adequate deep water for the transportation of goods produced to serve the Nation. Approximately 11% of the Nation's oil supply is handled in this area.

Your favorable action would be appreciated.

GULF INTRACOASTAL WATERWAY (OPERATION AND MAINTENANCE)

The City of Port Arthur fully supports the request for $12,380 for operation and maintenance of the Intracoastal Waterway System.

Approximately 12 miles of the busiest part of this waterway is within the City limits of Port Arthur, and it plays a vital role in serving the major industry of this area.

The City of Port Arthur would like to go on record in support of this important waterway system and encourages you to approve funds for continued operation and maintenance.

STATEMENT OF FRIENDSWOOD, TEX

The City of Friendswood is located in Galveston and Harris Counties with Brazoria County directly west of our city boundary. The City of Friendswood is traversed by Clear Creek being the major artery which the other creeks feed into, as do numerous major drainage outfalls outside our community. Due to the tremendous growth over the entire Clear Creek watershed, the runoff from development contributes many times the amount of water in Clear Creek than the creek can handle in its present configuration.

The Clear Creek watershed drains four counties: Fort Bend, Brazoria, Galveston, and Harris. Damages due to flooding in the Clear Creek watershed are in the hundreds of million-dollar range rather than simply millions of dollars. In fact, a recent report published by the Federal Emergency Management Agency lists the City of Friendswood as being number eight in the entire nation for damage claims paid due to flooding. Since these damage claims have been paid wholly or in part by the Federal Government, it seems to us that logic would dictate the need for a cooperative effort by the Federal Government and local sponsors to take necessary steps to improve the carrying capacity of Clear Creek to prelude recurring expenditures of the magnitude in the recent past.

For the past twenty years, the Corps of Engineers has been studying ways to solve this problem. Funds have been appropriated each year to enable the Corps to continue this study. The last plan presented to the people of this area was received with enthusiasm. Harris County appropriated the necessary funds to finance a second outlet from Clear Lake into Galveston Bay to complement the Corps' plan. The study now seems to be complete; what is needed now is implementation of the plan.

On behalf of the citizens of Friendswood and surrounding areas, we, the officials of the City of Friendswood, urge the members of your committee to seriously consider the appropriation of construction funds for the Corps of Engineers Clear Creek Project in the FY 1986 budget.

CITY OF FRIENDSWOOD, TEXAS

CITY COUNCIL RESOLUTION NO. R8-85

A RESOLUTION ENDORSING THE U. S. ARMY CORPS OF ENGINEERS CLEAR CREEK FLOOD CONTROL PROJECT; AND URGING THE UNITED STATES CONGRESS TO ACT FAVORABLY ON THE FY86 BUDGET.

WHEREAS, a serious flood problem exists in the Clear Creek Watershed where existing residential and commercial areas are periodically subject to extensive damages from rising waters in the creek; and

WHEREAS, in the City of Friendswood in July 1979, 1600 out of 3000 homes were flooded with coincident economic losses exceeding $38,000,000; and

WHEREAS, in the City of Friendswood in September 1979, 500 of these homes were again flooded; and

WHEREAS, in the City of Friendswood in January 1980, 75 of these homes were again flooded; and

WHEREAS, the citizens continue to suffer economic loss and mental anguish as a result of flooding; and

WHEREAS, the citizens have been donating their time and labor in an effort to clear the creeks and banks of debris; and

WHEREAS, all of the local organizations are working together and providing local funding to improve drainage; and

WHEREAS, the United States Congress in 1968 authorized the U.S. Army Corps of Engineers to design a flood control project which would provide a significant measure of protection from recurring flooding problems in the Clear Creek Watershed; and

WHEREAS, the study has been completed and a consensus has been achieved by all local sponsors and entities and endorsed by the 67th Texas Legislature; and

WHEREAS, the project has been approved by the U.S. Army Corps District in Galveston and the Corps Southwest Division; and

WHEREAS, further delays will significantly increase the cost of the project as well as the probability of additional flooding;
NOW, THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FRIENDSWOOD:

THAT the City re-endorse the U.S. Army Corps of Engineers Clear Creek Flood Control Project; and

THAT the City urge the Congress of the United States to adopt the FY86 budget and appropriate construction funds so that the U.S. Army Corps of Engineers may begin the rectification work as soon as possible; and

THAT the City urge the Congress to take whatever additional action is necessary to expedite the project and thereby reduce the emotional, physical, and economic suffering due tc flooding.

THAT the City Secretary forward official copies of this resolution to the President of the United States, to the Speaker of the House of Representatives and President of the Senate of the United States Congress, and to all members of the Texas Delegation to the Congress, with the request that this resolution be officially entered into the Congressional Record.

PASSED, APPROVED AND ADOPTED THIS 11th day of March 1985.

Ralph L. Lowe
RALPH L. LOWE, MAYOR

Leon Brown
LEON BROWN, COUNCILMAN

Robert W. Wicklander
ROBERT WICKLANDER, MAYOR PRO TEM

Jan Jordan
JAN JORDAN, COUNCILMAN

Evelyn Newman
EVELYN NEWMAN, COUNCILMAN

Paul Schrader
PAUL SCHRADER, COUNCILMAN

Bruce Branham
BRUCE BRANHAM, COUNCILMAN

Statement of Port of Port Arthur, Tex.

We respectfully ask that you favorably consider the public works funds request, by our Congressman Jack B. Brooks, for the Operations and Maintenance of the Sabine Neches Waterway and the Gulf Intracoastal Waterway of Texas. Only minimally necessary funds are requested, to insure the operation and maintenance of these vital federal waterways.

The major refineries on our Sabine Neches Waterway annually produce a high percentage of America's energy fuels. The Waterway handles up to 38,000,000 S/T of commerce, including import crudes, domestic and export shipments as well. The economic and military security of America depends on keeping these vital waterways open, now and in the future.

The Gulf Intracoastal Waterway of Texas is an indispensable connecting link between hundreds of chemical and petrochemical plants and other refineries, here and across the Gulf Coast. Combined plant investment of these essential industries exceeds $30 billion, just on the Texas segments of the Gulf Intracoastal Waterway, alone, according to recent estimates.

No new construction is anticipated in these requests, and the funds appropriated are vital to our economy and national defense. Your favorable consideration is justified, we submit, and is respectfully requested.

Statement of Galveston County (Tex.) Drainage District No. 1

On Behalf of the Commissioners of Drainage District Number One and Citizens of Galveston County, we request your support on expansions on Dickinson Bayou. The area of Dickinson Bayou watershed continues to develop residential and commercial, the risk of heavier flooding continues to rise each year. Dickinson Bayou seriously flooded twice in 1979 causing extensive damage. In August of 1983 Hurricane Alicia caused extensive wind damage, blowing trees into the Bayou. We request your approval of the Dickinson Bayou Advanced Engineering and Design in the amount of $250,000. to study the possible avenues of flood relief.

Statement of Coastal Soil and Water Conservation District, Texas

The Coastal Soil and Water Conservation District Board of Directors are certainly interested in the completion of the Taylor's Bayou project for all persons concerned. This project would eliminate millions of dollars in damages of urban, industrial and rural American properties. With the development planned for the Beaumont city drainage, the lower area of the Taylor's Bayou project will be highly susceptible to increased flooding over that which already occurs at this time.

If the three phases of the Taylor's Bayou project could be completed as quickly as possible, this would eliminate large amounts of losses to all people in the watershed. We appreciate the budgeting of $4.8 million in supporting and completing the drainage project so badly needed in this area. Thank you for your support.

STATEMENT OF PORT OF GALVESTON, TEX.

We respectfully request your consideration of our comments on the following projects included in the F.Y. 1986 budget. There are two navigation projects in the Galveston area that require funding.—

GALVESTON HARBOR AND CHANNEL

(Operation and Maintenance)

The Port of Galveston's Harbor and Channel is authorized to be maintained at a 40 foot project depth. This depth is required for vessels serving the Port's two export elevators and its container terminal.

In 1984, 258 million bushels of bulk grain was exported through the Port of Galveston. Much of this grain is transported in large ships requiring the full 40 foot depth. This trade is very important to the farmers in the Midwest and Southwest. It is also an important part of reducing our National Foreign Trade deficit.

In 1984, over 625,000 tons moved through the Port's container terminal. The Port completed, in 1984, improvements that doubled the capacity, investing over $12 million in this expansion.

The President's budget includes $6,365,000 for this work. It is our understanding that the Corps of Engineer's current estimated cost is $7,365,000, and we recommend this amount be authorized.

GALVESTON BAY AREA

(Navigation Survey)

This study of the future navigation needs of the ports in the Galveston Bay Area is necessary to give information to the Federal government for orderly planning of future developments. The study should be completed in 1986.

The President's budget includes $230,000 for this work. This amount is adequate and necessary for the completion of this study.

GULF INTRACOASTAL WATERWAY

(Operation and Maintenance)

The President's budget includes $12,380,000 for this waterway. It is our understanding that the Corps of Engineers current estimated cost is $15,030,000, and we recommend this amount to be authorized. This waterway is of vital importance to industry located along the entire Gulf Coast.

We thank you again, Mr. Chairman, for your consideration of our comments.

STATEMENT OF JEFFERSON COUNTY (TEX.) DRAINAGE DISTRICT NO. 7

As one of the local sponsors of the Taylors Bayou Project, Jefferson County Drainage District No. 7 wishes to endorse the proposed $4,800,000 provided in the fiscal year 1986 budget for the continued construction of this much needed drainage project.

Taylors Bayou and its tributaries drain about sixty percent of Jefferson County. This project will widen and deepen these channels in order to provide necessary outlets for its drainage. With the completion of this project, the benefits of extensive upstream improvements accomplished by local interests will be realized.

This project was originally recommended by the Corps of Engineers in 1948. Since that time the solutions to the many varying problems have been worked out, and construction is now in progress. What was needed in 1948 is today a necessity, and the importance of its completion is critical to our future growth and the well-being of our citizens.

We request the Committee's approval of the $4,800,000 proposed in the fiscal year 1986 budget.

STATEMENT OF THE TRINITY IMPROVEMENT ASSOCIATION

SUMMARY OF REQUESTS - FY 1986

On behalf of the Trinity River of Texas delegation, the Trinity Improvement Association recommends the support of the Congress for the following projects of the Corps of Engineers and the Bureau of Reclamation in considering the Energy and Water Development Appropriations Bill for Fiscal Year 1986.

FUNDING REQUESTS:

PROJECT	BUDGET REQUEST
CORPS OF ENGINEERS	
SURVEYS, ADVANCE ENGINEERING & DESIGN	
JOHNSON CREEK, ARLINGTON	$ 202,000
TRINITY RIVER PROJECT	$ 500,000
CONSTRUCTION	
GRAPEVINE LAKE (REHAB)	$ -0-
COOPER LAKE	$ 3,000,000
JOE POOL LAKE	$ 7,800,000
RAY ROBERTS LAKE	$ 52,000,000
OPERATIONS & MAINTENANCE	
BARDWELL LAKE	$ 873,000
BENBROOK LAKE	$ 1,263,000
GRAPEVINE LAKE	1,372,000
JOE POOL LAKE	$ 268,000
LAVON LAKE	$ 1,861,000
LEWISVILLE LAKE	$ 2,001,000
NAVARRO MILLS LAKE	$ 936,000
RAY ROBERTS LAKE	$ 96,000
WALLISVILLE LAKE	$ 245,000
TOTALS	$ 72,417,000
U. S. BUREAU OF RECLAMATION	
GENERAL INVESTIGATIONS	
BEDIAS PROJECT	$ 395,000

ADMINISTRATIVE REQUESTS:

Progress on the Wallisville Reservoir project has been injoined by the courts pending resolution of problems with the Environmental Impact Statement. Should the injunction be lifted, and the Corps of Engineers express a construction capability, we ask that this project be funded.

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

My name is Russell H. Perry of Dallas, Texas; and I am President of the Trinity Improvement Association. This is a non-profit organization of citizens from throughout the basin, dedicated to the prudent development and use of water and soil resources of the Trinity River basin of Texas.

You have heard testimony from our congressional representatives concerning some of our needs. Our delegation of 54 people has traveled here to present additional testimony in support of water projects vital to our area. It will be my duty today to coordinate the testimony of this group, diverse in background but united in purpose.

The continuing growth in population and industrial development which is occuring in our part of Texas has placed very heavy demands on existing water supplies. The financial burden of providing water needs grows heavier each year. We are mindful of the federal government's problems in trying to reduce expenditures. We note that the budget request for Corps of Engineers civil works for the entire country for Fiscal Year 1986 is eight percent less than for the previous fiscal year. Projects benefitting our own Trinity River basin in Texas are budgeted for 15% less than last year and when non-federal contributions are taken into account, the net reduction becomes 19%.

We request this committee's support of funding for the fourteen Corps of Engineers and one Bureau of Reclamation projects listed on the summary page of this presentation. We also have an administrative request concerning the Wallisville project. These will be addressed in statements following my remarks.

We are extremely grateful for the time which this committee has graciously allotted us for this presentaiton. Please accept our appreciation for the job you have done, in these difficult times, maintaining sound water development programs that have proved their economic and environmental soundness.

Mr. Chairman, I wish to submit for the record a complete list of our delegation appearing here today and copies of the testimony to be given by our group.

Again, thank you for allowing us to appear before this committee; and we urge your favorable consideration of our requests.

With these remarks, I would like to call on a few members of the delegation who will speak briefly on projects of specific concern to their areas.

STATEMENT OF DALLAS, TEX.

My name is Annette Strauss and I am Mayor Pro Tem for the City of Dallas. Let me express my appreciation as well as that of Mayor Starke Taylor and the Dallas City Council for your committee's continued support for the Ray Roberts Lake Project.

The Cities of Dallas and Denton are co-sponsors of the Ray Roberts Lake project. Today I represent the interests of both cities. Since we last appeared before this committee in April 1984, construction of the dam and outlet works has progressed quite satisfactory. And, the acquisition of project lands is on schedule. Due to good Texas weather and adequate funding, the contractor has completed 78% of the construction. The Corps advises us that they now anticipate to begin filling the reservoir in mid 1987.

The Cities of Dallas and Denton contracted with the Corps of Engineers for design and construction of this project to obtain 76 million gallons per day water supply. In addition, much needed recreational facilities will be provided for the region. As you are aware, the Sunbelt has experienced rapid growth in the last few years and the Dallas area has been one of its fastest growing areas. In order to service this growth, the water supply, the recreational opportunities, and the flood protection offered by this project are necessary. For this reason, the Cities of Dallas and Denton request that President Reagan's 1986 budget allocation for the Ray Roberts Lake Project be accepted and supported by the committee. Funding requested includes $52 million for continued project constructon and $96,000 for reservoir operation and maintenance.

With your approval of the funding for 1986, this project can remain on schedule and construction of the dam, road and railroad relocations,

design of recreational facilities, and land acquisition can continue. Any cut backs could mean a delay in the timely completion of this project which could hamper us in meeting the water needs of our region. You are aware that the local sponsors repay with interest the money advanced by the federal government. Any slowdown would delay the government getting its money back -- since the local sponsors do not start repayment of the loan until the project is complete.

I urge your careful consideration of the Administration's budget request and your support of full funding for the Ray Roberts Lake project. Thank you for your continued cooperation in this matter. I appreciate and thank your for the opportunity to address you today.

RAY ROBERTS LAKE
INFORMATION SHEET

* General Facts
  - Location: On Elm Fork of Trinity River, in northeast Denton County extending into Cooke and Grayson Counties. Dam site is 30 river miles upstream from Lewisville Lake Dam
  - Storage: 799,600 acre feet of water covering 37,630 acres of land
  - Dam: Earth filled with concrete spillway and outlet works
  - Total project size: 43,460 acres
* Dallas and Denton are local sponsors of project
  - Share in water and share in costs 74%/26%
* LWFW conducted Feasibility Study for local sponsors
  - Looked at alternate reservoirs
  - Looked at alternate financing
  - Recommended contracting with Corps for Ray Roberts
* Corps Contracts
  - Federally financed
  - Interest rate fixed at 7.21%

- Pay back over 50 years
- Two contracts: Water supply and Recreation
- Contract includes raising the elevation of Lake Lewisville by 7 feet
- Council authorized City Manager to enter into contracts January 30, 1980
- Contracts signed September 16, 1980
- Construction began 1980

* Estimated Costs (1984 dollars)

	Water Supply	Recreation	Total
Dallas	$119,551,000	$14,024,000	$133,575,000
Denton	42,005,000	4,923,000	46,928,000
Corps	80,550,000	18,947,000	99,497,000
TOTAL	$242,106,000	$37,894,000	$280,000,000

* Water Supply Contract

- Term is 100 years
- Corps to finance, build, operate, and maintain reservoir
- Cities reimburse Corps for O&M expenses related to water supply
- Repayment of 48% of water supply capital costs can be deferred, interest free, for 10 years
- Payment begins upon closure of dam gates, currently anticipated in July 1987

* Recreation Contract

- Corps and local sponsors pay 50-50 of construction costs
- Local sponsors responsible for 100% of O&M
- Recreation facilities at Lewisville Lake as well as Ray Roberts
- Corps to develop Recreation Master Plan with local sponsor assistance
- Master Plan for Ray Roberts completed and approved, and design has begun

* Recreation Master Plan

- 2 major parks developed initially - Johnson Branch and Isle du Bois
- 2 parks for future development - Culp Branch and Jordan

- 3 small parks/access points - Pecan Creek, Pond Creek, and Buck Creek

- Downstream access to park

- 7 wetland areas for water fowl

- 8 fish rearing facilities

- Guaranteed 15 cfs minimum release to maintain fish and wildlife habitat between Ray Roberts Lake and Lake Lewisville.

* Texas Parks and Wildlife Department Involvement
  - Will finance and construct State Park at Roberts

  - Local sponsors finance and construct remaining recreational facilities

  - Texas Parks and Wildlife agreed to manage, operate, and maintain all recreational facilities and lands

  - Will not manage, operate, and maintain park at Lewisville

  - Will manage, operate, and maintain Greenbelt Park

GREENBELT CORRIDOR
INFORMATION SHEET

I. General Background

* Possible park identified by Corps 1974

* Dallas staff requested Corps to evaluate greenbelt as alternative to conventional park required for Lewisville Lake

* State willing to fund 25% construction cost and to manage, operate, and maintain

* Corps found Greenbelt offered recreational opportunities not found in conventional park at Lewisville Lake: canoeing, rafting, stream fishing, protection of environmentally sensitive area

* Less acreage (1,860 acres compared to 2,900 acres)

* Less costly ($3,095,000 compared to $4,322,000)

* Less annual O&M ($50,000 compared to $192,000)

* Better cost to benefit ratio (10.2 to 1 compared to 4.5 to 1.0)

II. Current Status

* Corps drafted supplements to contracts and master Plan

* Corps held public comment period

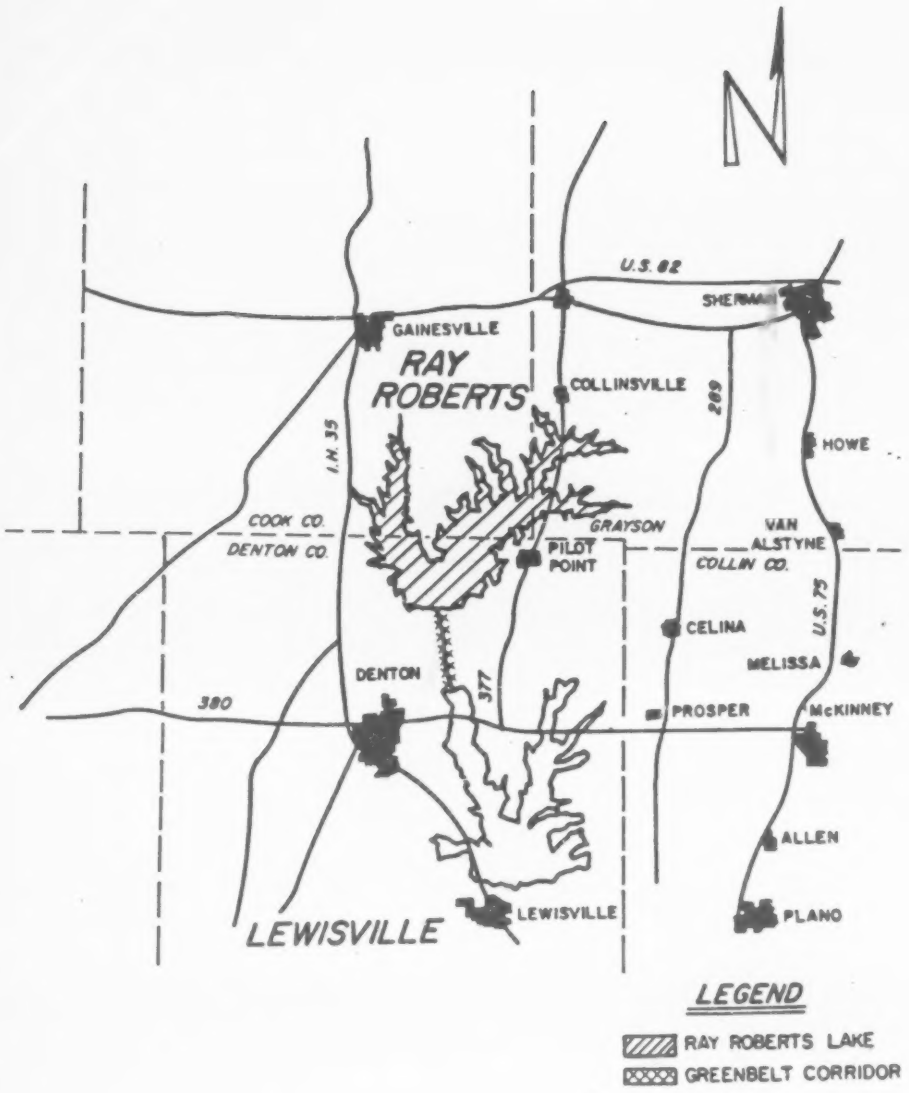
* Some property owners whose lands would be taken are opposed

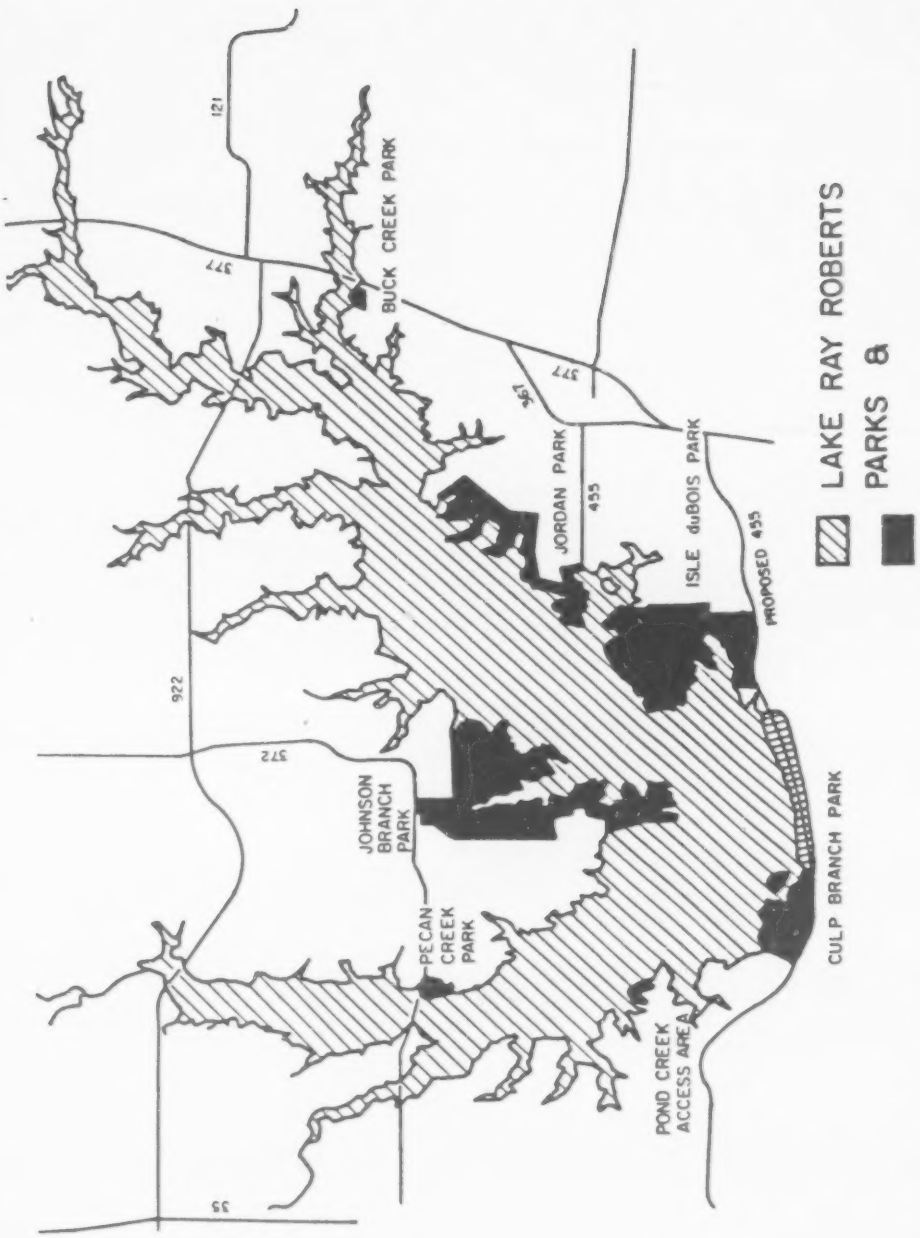
* Supported by:
  - Texas Parks & Wildlife Department
  - Various environmental groups
  - Dallas Parks & Recreation Department
  - City of Dallas (Council Resolution 11-2-83)
  - City of Denton (Council Resolution 10-4-83)
* Corps conducted Public Hearing September 26, 1983
  - 250 people attended
  - 50-50 for and against
* Corps evaluated support for Greenbelt land and issued Public Notice that Greenbelt Park Study will continue
* Corps conducted public workshop in April, 1984.
* Cities and Corps agreed upon a Greenbelt plan that includes the State contributing 25% of funding. (October, 1984)
* Corps issued a Public Notice in November, 1984 recommending development of the greenbelt corridor. A 30 day comment period was allowed.
* Corps District Office sent recommended plan to the SW Division office for approval. (January, 1985) Final approval not yet received.
* Cost to Dallas has been tentatively estimated at $744,250.

TOTAL PROJECT STATUS
RAY ROBERTS LAKE

As of January 1, 1985

Project Category	Percent Complete
Dam and Outlet Works	78%
Real Estate Acquisition	58%
Road and Rail Relocations	15%
Reservoir Clearing, Grading	16%
Recreation Facilities	0%
Cultural Resource Preservation	47%
OVERALL PROJECT	42%


N
U.S. 82
SHERMAN
GAINESVILLE
RAY ROBERTS
COLLINSVILLE
289
I.H. 35
HOWE
COOK CO.
DENTON CO.
GRAYSON
VAN ALSTYNE
COLLIN CO.
PILOT POINT
U.S. 75
CELINA
MELISSA
DENTON
377
380
PROSPER
McKINNEY
ALLEN
LEWISVILLE
PLANO
LEWISVILLE
LEGEND
RAY ROBERTS LAKE
GREENBELT CORRIDOR


121
377
BUCK CREEK PARK
377
461
JORDAN PARK
455
ISLE duBOIS PARK
PROPOSED 455
LAKE RAY ROBERTS
PARKS &
922
372
JOHNSON BRANCH PARK
PECAN CREEK PARK
CULP BRANCH PARK
POND CREEK ACCESS AREA
35

Statement of the North Texas Municipal Water District

My name is Carl W. Riehn. I am the Executive Director of the North Texas Municipal Water District and today I also represent the Sulphur River Municipal Water District and the City of Irving in their interests as local sponsors that will repay 100% of the cost for water supply in the construction of Cooper Lake Project, Texas.

We are appreciative and thankful for the support of this Committee and Congress on the Cooper Lake Project over these last many years in sustaining the necsssary appropriations to continue the fight for the project and to have funds available for the Corps of Engineers and the Federal Attorneys involved. We are even more elated to be able to report that on July 16, 1984 the United States Court of Appeals, Fifth Circuit, overruled the United States District Court for the Eastern District of Texas, William Wayne Justice, and dissolved the injunction against the project. The Court Order read, "Because the injunction exceeded the Court's authority, it's judgement must be reversed, ...let the work on this project, legally halted since 1971, begin.REVERSED: INJUNCTION DISSOLVED."

Our area continues to grow with increasing demands for water supply. The last few years has seen rainfall above average which has created greater flooding on the Sulphur River and continued damage to the property owners but, this only means that drought years and water short years are ahead. Therefore, we can only urge your continued support for the project with the appropriation of the full three million dollars that is in the President's Budget and is needed for the Corps of Engineers to complete the engineering and prepare for the major construction.

The need for restraint in federal spending is obvious to all. In this instance, the need for the use of the natural resource by the area is also obvious, even if you only look at the North Texas Municipal Water District and its' population growth from some 32,000 in 1950 to in excess of 560,000 in 1984, with a projected increase to one million by the year 2000. The historical delay in this project has cost everyone in dollars, patience, and faith. We now plead that this project deserves to move forward as rapidly as possible.

Statement of the Trinity River Authority of Texas

I am Blake Gillen of Corsicana, Texas. I am a member of the Board of Directors of the Trinity River Authority of Texas (TRA) representing Navarro County and currently serve as the Authority's President.

TRA strongly endorses and requests your support for the funding recommended in the Administration's FY 1986 budget for those projects for which we are the local sponsor. Within our political subdivision, the federal investment in water resource development helped set the stage for unparalleled economic development and population growth. Additional federal water resource development assistance, in the form of our funding requests that follow, will be necessary if we are to even begin to meet the tremendous future water needs of people dependent on the resources of the Trinity River. We earnestly solicit your attention and support.

FUNDING REQUESTS:

A. Continuing congressional support for construction funding for Lake Joe Pool and Lake Ray Roberts in the Upper Trinity Basin will remain of crucial importance during FY 1986. The Fort Worth District of the Corps advises that $7,800,000 will be adequate for the Joe Pool project, which TRA sponsors. The Ray Roberts project, which is sponsored by the Cities of Dallas and Denton, will require $52,000,000 for the 1986 fiscal year.

B. The amount of $395,000 has been proposed for inclusion in the U.S. Department of Interior Bureau of Reclamation's budget request for a general investigation on the feasibility of a Bedias Reservoir in the lower Trinity. Based on what we now know, the Bedias Lake has the potential of producing a large volume of water that would be immediately available to people with a tremendous future need. If and/or when this project is built, TRA's intention is to be involved to insure that a substantial portion of that water remains available to use within the Trinity River Basin.

C. Suburban development in the Dallas/Fort Worth metroplex community of Arlington has created increasingly severe flooding problems within the Johnson Creek watershed. A total of $202,000 was included in the

President's budget message that will enable the Fort Worth District of the Corps to conduct a flood control survey on this problem. We request your support for this appropriation.

D. Operation and maintenance funding for Bardwell Lake, $873,000; Navarro Mills Lake, $936,000; Ray Roberts Lake, $96,000; and the Wallisville Reservoir and Saltwater Barrier, $245,000 requires your support.

E. TRA also asks your support for a $500,000 appropriation for advanced engineering and design efforts on the navigation to Liberty component of the Trinity Project study.

ADMINISTRATIVE REQUESTS

The long-delayed Wallisville Reservoir and Saltwater Barrier Project is again in motion. The Corps of Engineers and local sponsors have filed motions in the Southern District Court of Texas requesting relief from the 1973 injunction.

Realistically, there is little to ask of this Committee at the present time, beyond your continuing support for this most essential project. We have done everything possible to prepare for this court date and are genuinely hopeful that we will be approaching you in the not too distant future for construction funding.

CONCLUSION

The Trinity River Authority always appreciates the opportunity to appear before this Committee, and in this time of budget cuts, particularly appreciates your continuing visionary support for water development. Thank you for your attention.

STATEMENT OF PORT OF LIBERTY, TEX.

Mr. Chairman and Committee Members, my name is Ark Barkis, and I currently serve as a Commissioner for the Port of Liberty. Today, I am also acting as spokesman for the City of Liberty and lower Trinity region in general.

Our Port of Liberty is located at Trinity River Mile 45, and has been usable only during periods of extremely high river rises for the last seven years.

You demonstrated faith in our request last year and appropriated the necessary funds to dredge our river. For this we are deeply appreciative.

We are happy to state that the cooperation and communication between all the entities involved has been of the highest quality and produced excellent results.

The progress to date would not have been possible without tireless efforts of this Committee, the House and Senate, the Corps of Engineers, the Trinity River Authority, the Chambers-Liberty Counties Navigation District, the City of Liberty and the Port of Liberty. Many leading local businessmen and landowners took an active part in securing the necessary easements. Never before in the history of this river project have so many easements been required and secured. Most active in this effort was former U. S. Senator Price Daniel.

The Corps of Engineers is currently using the appropriation to survey the river and will very shortly advertise for bids to dredge and maintain the six-foot channel. Because of this wonderful news, we have already been advised of the availability of potential customer tonnage

on the river. They include Mississippi Chemical, Pittsburgh-Des Moines Steel, National Pipe & Tube and local aggregate material suppliers, to name just a few.

Truly our work has just begun. We have already started to secure other tracts of land for spoil and flowage easements, and will submit these areas for EIS consideration in the near future.

The Galveston District of the Corps of Engineers has advised us that sufficient funds will be available to adequately dredge the existing six-foot channel during FY 1986, so a line item appropriation for this purpose will not be required for the coming year. Funds for this most essential purpose will be required in future years, however, if this commercial lifeline is to remain viable.

The total solution for facilitating navigation to our port will only be realized through the construction of a multiple-purpose channel. For this reason we further request your support for the $500,000 appropriation for advanced engineering and design efforts on the Navigation to Liberty component of the ongoing Trinity Project study.

For all of us on the lower Trinity, please accept our sincere thanks.

STATEMENT OF HOUSTON (TEX.) CHAMBER OF COMMERCE

MR. CHAIRMAN AND COMMITTEE MEMBERS, MY NAME IS LARRY B. FELDCAMP OF BAKER & BOTTS, HOUSTON, TEXAS. I AM TESTIFYING TODAY AS THE REPRESENTATIVE OF THE HOUSTON CHAMBER OF COMMERCE.

HOUSTON CURRENTLY LOOKS TOWARD THE TRINITY RIVER AS A MAJOR SOURCE OF SURFACE WATER AND WILL BE MAKING EVEN GREATER DEMANDS IN THE FORSEEABLE FUTURE.

THE LONG DELAYED WALLISVILLE PROJECT AT THE MOUTH OF THE TRINITY RIVER WILL PLAY A STRATEGIC ROLE IN OUR ON-GOING EFFORTS AGAINST LAND SUBSIDENCE AND THE RESULTING FLOODING AND PROPERTY DAMAGE. THE USE OF SURFACE WATER AS AN ALTERNATIVE TO THE PUMPING OF WELL WATER IS A MAJOR TACTIC IN THE STRUGGLE AGAINST SUBSIDENCE.

THE YIELD OF THE LOWER TRINITY CANNOT REACH ITS ULTIMATE MAXIMUM WITHOUT DEVELOPMENT OF THE WALLISVILLE STRUCTURE AT THE EARLIEST PRACTICABLE TIME. THIS VITAL PROJECT WILL REDUCE THE NEED FOR FRESH WATER RELEASES FROM LAKE LIVINGSTON, WILL PROTECT THE RIVER WATER PUMP STATIONS FROM SALT WATER ENCROACHMENT, WILL HELP REGULATE DESIRABLE LEVELS IN TRINITY AND GALVESTON BAYS, AND, MOST IMPORTANTLY, WILL FIRM ALL WATER RIGHTS BELOW LAKE LIVINGSTON. STUDIES GOING BACK TO 1957 HAVE INCLUDED WALLISVILLE AS AN ESSENTIAL PART OF THE TOTAL PROJECT.

THE HOUSTON CHAMBER APPRECIATES THE ROLE THIS COMMITTEE HAS PLAYED IN GETTING THE WALLISVILLE LITIGATION BACK INTO THE SOUTHERN DISTRICT COURT OF TEXAS, AND WE SOLICIT YOUR CONTINUING SUPPORT. THE LOCAL SPONSORS OF WALLISVILLE ARE WELL PREPARED FOR THEIR DAY IN COURT AND ARE HOPEFUL THAT A RESUMPTION AND COMPLETION OF CONSTRUCTION WILL BE ACHIEVED WITHIN THE NOT TOO DISTANT FUTURE.

THE HOUSTON CHAMBER OF COMMERCE RECOGNIZES THE IMMINENT NEED FOR A JOINT BUREAU OF RECLAMATION/TRINITY RIVER AUTHORITY STUDY OF A BEDIAS LAKE IN THE MID-TRINITY RIVER BASIN AREA TO AUGMENT FURTHER DEVELOPMENT OF OUR WATER RESOURCES.

PRELIMINARY ESTIMATES PUT THE WATER SUPPLY YIELD OF THIS LAKE AS HIGH AS 100 MGD. WATER GENERATED BY A BEDIAS LAKE COULD READILY BE TRANSFERRED INTO ANY OR ALL OF THREE SEPARATE WATERSHEDS. THIS WOULD ENABLE THE DELIVERY OF RAW WATER TO EITHER THE EAST NORTH OR WEST SIDE OF THE MASSIVE HOUSTON METROPOLITAN AREA, A MAJOR STRATEGIC CONSIDERATION IN ITSELF. WHILE HOUSTON HAS NO FIRM CURRENT COMMITMENT TO A BEDIAS LAKE AT THIS TIME, THE POTENTIAL IS SUCH THAT WE STRONGLY SUPPORT THIS FEASIBILITY STUDY.

Statement of Joe Pool Lake Planning Council, Texas

My name is Greg Patton and I currently serve as President of an ad hoc citizen group called the Joe Pool Lake Planning Council. The Council has served as the lead booster for Joe Pool Lake since before it was authorized for construction by Congress in 1965.

As an organization, we are poised today on the verge of total success. For those of us who have seen Joe Pool Lake restudied, relocated and renamed in the last 20 years, we find it very gratifying.

I am here today to say thank you for your vision and support. The Corps of Engineers has acquitted itself faultlessly throughout the construction process and they are approaching completion. The Corps has assured us that the proposed appropriation of $7.8 million will be adequate for their purposes in FY 1986. We therefore strongly urge your support for an appropriation in this amount.

Joe Pool Lake is already functioning as an incredibly vigorous catalyst for economic growth in our quadrant of the Dallas/Fort Worth metropolitan area. The water supply contained within Joe Pool will play a major role in maintaining the quality of life for the thousands of new residents that are moving into new neighborhoods around the Lake.

Thank you for your attention.

STATEMENT OF THE TEXAS DEPARTMENT OF WATER RESOURCES

BRAZOS RIVER BASIN

The Texas Department of Water Resources respectfully submits project testimony regarding Corps of Engineers projects located in the Brazos River Basin of the State of Texas.

Responsibility for Statewide planning and development of water resources rests with the Texas Department of Water Resources. The Department has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Department has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water need and to provide National, State, and regional economic growth and stability. The Department of Water Resources maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects included in this statement are considered as integral elements in the State's present and future water resource development program.

SAN GABRIEL RIVER PROJECT

The authorized plan of improvement for the San Gabriel River consists of a system of three lakes in Williamson County in the San Gabriel watershed of the Brazos River Basin. Lakes Granger, Georgetown, and South Fork were authorized by the Flood Control Acts of 1952 and 1962. These lakes will provide storage for flood control, municipal and industrial water supply, and recreational benefits and are an important unit in the Corps' Brazos River Basin system of multiple-purpose water resource development projects. Deliberate impoundment of water in Lakes Granger and Georgetown was initiated early in 1980, and already almost all of the water supply to be provided by these lakes is committed under contract to meet municipal and industrial water needs in the vicinity of the lakes and in areas downstream. South Fork Lake is the only component of the project not completed.

The Texas Department of Water Resources supports the President's request for an appropriation of $200,000 to continue advanced engineering and design studies for South Fork Lake of the San Gabriel River Project during FY 1986.

OPERATION AND MAINTENANCE
OF EXISTING PROJECTS

The Department supports appropriations to the Corps of Engineers for operation and maintenance of the following projects during FY 1986. Aquilla Lake ($469,000); Belton Lake ($1,378,000); Georgetown Lake ($852,000); Granger Lake ($708,000); Proctor Lake ($925,000); Somerville Lake ($1,675,000); Stillhouse Hollow Lake ($1,072,000); Waco Lake ($1,673,000); and Whitney Lake ($2,918,000).

RED AND SULPHUR RIVER BASINS AND CYPRESS CREEK BASIN

The Texas Department of Water Resources respectfully submits project testimony regarding Corps of Engineers projects located in the Red and Sulphur River Basins and Cypress Creek Basin of the State of Texas.

Responsibility for Statewide planning and development of water resources rests with the Texas Department of Water Resources. The Department has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Department has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water need and to provide National, State, and regional economic growth and stability. The Department of Water Resources maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects included in this statement are considered as integral elements in the State's present and future water resource development program.

RED RIVER BASIN CHLORIDE CONTROL PROJECT

The Red River Basin Chloride Control project, directed toward the improvement and preservation of water quality in the states of Texas, Oklahoma, Louisiana and Arkansas is imperative in order to realize full utilization of these surface-water supplies. Presently, more than 1,000 miles of streams in the river basin are severely contaminated by natural brines. Consequently, waters of the streams are not suitable for municipal and most industrial and agricultural purposes. Large volumes of salt enter the streams from 15 natural sources, 10 of which are located in Texas. There exists an immediate need for good quality water within and to the west of the areas of natural salt pollution, as well as a long-term need downstream in the eastern part of the Red River Basin.

Passage of the 1966 and 1970 Flood Control Acts (P.L. 89-789 and P.L. 91-611) authorized construction of measures to control the natural salt pollution from Areas VI, VII, VIII, IX, X XIII, XIV, AND XV in the basin, subject to the provision that construction on the project could not be started until approved by the Secretary of the Army. Initiation of construction on Area VIII on the Wichita River prior to the required approval by the Secretary of the Army, was authorized by the 1974 Water Resources Act. Construction on Area VIII, which includes the Truscott Brine Lake, was begun in February 1977 and is nearing completion. With the exception of Area VIII, construction on the remaining seven areas and two brine lakes of the Red River Chloride Control project is awaiting approval by the Secretary. It is our understanding the Secretary is delaying approval pending a commitment of up-front financing from the states involved in the overall project.

Congress authorized construction of the entire Red River Chloride Control project to control natural brine sources as a 100 percent federal project (P.L. 89-789 and P.L. 91-611). Subsequently, the components of the overall project were re-evaluated by the Corps of Engineers, at the request of Congress, and the results of the re-evaluation have been reported in the Corps' "Supplemental Data to Arkansas-Red River Basin Chloride Control, Red River Basin Design Memorandum No. 25, General Design, Phase I-Plan Formulation", Vols. I and II, Department of the Army, Tulsa District Corps of

Engineers, Oklahoma, November 1980. The re-evaluation reaffirmed both the economic and technical feasibility of this project. According to our information, the Secretary of the Army has not reached the necessary decisions regarding this project and has not forwarded the findings and project re-affirmation onward for ultimate Congressional action.

We urge strongly that Congress request the Secretary of the Army to forward the report and his recommendation on this project to the Office of Management and Budget, in accordance with the provisions of the project's authorizing legislation.

LAKE WICHITA, HOLIDAY CREEK

Lake Wichita was constructed on Holiday Creek by the City of Wichita Falls, Texas, in 1901. The dam and spillway, which provides partial flood protection for highly developed urban areas of the City of Wichita Falls, has deteriorated badly and the spillway capacity is inadequate to handle floods which occur in the Holiday Creek watershed. Further, the dam has been assigned a high hazard classification by the Corps under the National Dam Safety Program and has been declared unsafe by both the Corps and the State of Texas. In response to Congressional resolution and studies authorized by the Chief of Engineers, the Corps has completed studies and has recommended a plan to meet the flood control needs of the area which includes replacement of the existing Lake Wichita Dam and enlargement of the channel downstream of the dam. Additionally, feasibility studies of McGrath Creek flood control improvements were requested by the City of Wichita Falls. These studies are underway as part of the continuation of planning and engineering for Lake Wichita-Holiday Creek and are scheduled for completion in FY 85. The City of Wichita Falls strongly supports the project and will assume all non-federal responsibilities.

The President's budget recommends $1,500,000 be provided to initiate construction of the Lake Wichita--Holiday Creek project during FY 1986. The Department strongly supports authorization of the project and appropriation to the full extent of the President's budget for FY 1986 and continuation of the McGrath Creek studies.

COOPER LAKE AND CHANNELS, TEXAS

The Cooper Lake and Channels Project, located in the Sulphur River Basin upstream of Lake Wright Patman in the State of Texas, was authorized by Public Law 218 of the 84th Congress. In addition to providing 273,000 acre-feet of water conservation storage space, the reservoir will allow sufficient storage for basin-wide flood protection to convert 120,000 acre-feet of flood control space in Lake Wright Patman into water supply storage for the Texarkana water demand area.

The Department of Water Resources appreciates the consideration the committee has allowed the project in the past. Cooper Lake and Channels has been subjected to lengthy delays, due in large part in recent years to litigation under the National Environmental Policy Act and subsequent alleged inadequacies in the Environmental Impact Statement. That litigation has now been resolved. Completion of Cooper Lake is essential to meet existing and future water needs of the Sulphur River Municipal Water District, City of Irving, Texas, and the North Texas Municipal Water District. The North Texas Municipal Water District membership is eleven cities in the rapidly-expanding urban area of more than 530,000 residents in a 1,600 square-mile area to the north and east of Dallas, and also serves 44 other entities, including 17 customer cities, rural water supply corporations, and municipaltility districts in the region. The District faces serious, short-term water supply problems unless construction of Cooper Lake is reinitiated, since its total water supply is currently provided by one reservoir - Lake Lavon. This is considered one of the most critical water supply problems in Texas.

This project is one of the most urgently-needed water resource projects in Texas. The Department strongly urges the Committee to appropriate the $3,000,000 requested in the President's budget for FY 86 to reinitiate construction of Cooper Lake.

LITTLE CYPRESS CREEK

A study of the feasibility of improvements for flood control, water-conservation, and other water-related purposes in the Cypress Creek Basin was undertaken by the Corps of Engineers in October, 1979 pursuant to a resolution adopted May 9, 1979 by the Committee on Public Works and Transportation, U.S.

House of Representatives. This area of northeast Texas is undergoing significant growth due to development and utilization of lignite resources within the area. The occurrence of economically recoverable lignite reserves in the region has delayed construction of at least one major Corps of Engineers reservoir project in the area, thus seriously affecting the availability of firm water supplies for this region.

The current feasibility study is expected to require additional time for completion. The President's budget recommends $165,000 be appropriated for this study in FY 1986. The Department supports this request and urges that the Committee appropriate the amount of the President's budget for FY 1986 for this project.

RED RIVER AND TRIBUTARIES ABOVE DENISON DAM

The President's budget recommends $210,000 be provided during FY 86 to continue flood damage prevention studies in the Red River Basin above Denison Dam. The Department supports the President's recommendation for funding in FY 86.

RED RIVER LEVEES AND BANK STABILIZATION
BELOW DENISON DAM, TEXAS, ARKANSAS, AND
LOUISIANA

A total of $1,000,000 is included in the President's FY 86 budget to resume construction on levees, flood control structures and bank stabilization below Denison Dam. This construction is vital to protect the lives and property of the citizens of the Red River Valley. The Department supports the President's recommendation for funding in FY 86.

RED RIVER WATERWAY PROJECT

The Rivers and Harbors Act of 1968 authorized the Red River Waterway Project featuring a navigation channel from the Mississippi River to Shreveport, Louisiana, and Daingerfield, Texas, and stabilization of the banks of the Red River from the Mississippi River to Shreveport, Louisiana; Shreveport, Louisiana to Daingerfield, Texas; Shreveport, Louisiana to Index, Arkansas, and vicinity of Index, Arkansas to Denison Dam, Texas. Construction

under this authorization has been initiated in the Mississippi River to Shreveport, Louisiana Reach.

Completion of the Red River Waterway will significantly boost the economy throughout the river basin and reduce widespread unemployment of the area. Therefore, the Department supports the resumption of preconstruction planning of the waterway segment from Shreveport, Louisiana to Daingerfield, Texas and urges the Committee to appropriate $100,000 for this purpose in FY 1986.

OPERATION AND MAINTENANCE OF EXISTING PROJECTS

The Department supports appropriations to the Corps of Engineers for operation and maintenance of the following projects during FY 1986. Arkansas-Red River Basin Chloride Control, Area VIII ($383,000); Denison Dam, Lake Texoma ($4,044,000); Ferrells Bridge Dam-Lake O' the Pines ($1,975,000); Lake Kemp ($154,000); Pat Mayse Lake ($642,000); and Wright Patman Lake ($1,608,000).

CONCLUDING COMMENTS

The Texas Department of Water Resources requests Committee support of the Red and Sulphur River Basin and Cypress Creek Basin water resource development efforts. The Department most respectfully urges funds as requested in order to accomplish the coordinated, orderly development of vitally-needed water resource projects in the Red and Sulphur River Basins and the Cypress Creek Basin in the State of Texas.

TRINITY RIVER BASIN

The Texas Department of Water Resources respectfully submits project testimony regarding Corps of Engineers projects in the Trinity River Basin of the State of Texas.

Responsibility for Statewide planning and development of water resources rests with the Texas Department of Water Resources. The Department has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the

State's water resources, the Department has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water need and to provide National, State, and regional economic growth and stability. The Department of Water Resources maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects included in this statement are considered as integral elements in the State's present and future water resource development program.

JOHNSON CREEK - Grand Prairie, Texas

A total of $202,000 is included in the President's FY 1986 budget to complete a feasibility study of ways to protect this flood-prone area from flooding. The area is located between the urban complexes of Dallas and Fort Worth. The Department supports the President's recommended $202,000 in FY 1986 for studies to determine if structural relief from local flooding is a viable option.

RAY ROBERTS AND JOE POOL LAKES

Lake Ray Roberts (formerly Aubrey Lake), jointly sponsored by the cities of Dallas and Denton, and Lake Joe Pool (formerly Lakeview Lake), sponsored by the Trinity River Authority of Texas, are included in the President's budget for 1986 in the amounts of $52 million and $7.8 million, respectively. Both reservoirs are high priority projects because of rapid regional growth which is resulting in a need for additional water supply, flood control and recreation facilities which the lakes will provide. The Department requests the Committee's support for the budgeted amounts recommended by the President during FY 1986 in order to continue scheduled construction of these projects.

TRINITY RIVER, CHANNEL TO LIBERTY, TEXAS

The President's budget recommends $500,000 be provided during FY 86 to continue advanced engineering and design studies on the Trinity River, Channel to Liberty, Texas. The Department supports the President's recommendation for funding in FY 86.

OPERATION AND MAINTENANCE

The Department supports funding to the Corps of Engineers for operation and maintenance during FY 1986 for the following projects located in the Trinity River Basin: Bardwell Lake ($873,000); Benbrook Lake ($1,263,000); Grapevine Lake ($1,372,000); Joe Pool Lake ($268,000); Lavon Lake ($1,861,000); Lewisville Dam ($2,001,000); Navarro Mills Lake ($936,000); Ray Roberts Lake ($96,000); and Wallisville Reservoir and Saltwater Barrier ($245,000). These amounts are included in the President's budget for FY 1986.

CONCLUDING COMMENTS

The Texas Department of Water Resources requests Committee support of these regional water resource development needs. The Department most respectfully urges funds as requested in order to accomplish the coordinated, orderly development of urgently-needed water resources projects in the Trinity River Basin in the State of Texas.

PLANNING ASSISTANCE TO THE STATES

Section 22 of P.L. 93-251, as amended, provides authority for the Secretary of the Army, acting through the Chief of Engineers, to cooperate with any State in the preparation of comprehensive water and related resources plans for drainage basins located within the boundaries of the State. It has been the Corps' basic policy that such studies must furnish information that is needed by the State and will be used in State water planning activities. Section 22 also authorizes an annual appropriation not to exceed $4,000,000 to carry out its provisions, with the exception that not more than $200,000 can be expended in any one year in any one state.

Responsibility for Statewide planning and development of water resources in Texas rests with the Texas Department of Water Resources. The Department has been designated as the State agency to cooperate with appropriate agencies of the Federal government in matters relating to water resources planning and development, and as such, is the agency which coordinates the expenditure of Section 22 funds in Texas.

In order to assure orderly development of the State's water resources, the Department has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas. The "Plan" indicates the need for specific projects, including alternatives, to meet the State's water needs and to provide National, State, and regional economic growth and stability. The Department of Water Resources maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State and so that the "Plan" can be revised or updated periodically as required.

Since 1978, when Section 22 monies were first expended in Texas, annual expenditures have averaged only about $100,000 per year. During the period 1978-1982, pursuant to our request, the Corps used these funds to investigate lignite resources underlying non-federal reservoir sites proposed for future development in the Texas Water Plan. In 1983, at the Department's request, the Corps initiated a reconnaissance-level engineering feasibility study with Section 22 funds to find the most practical and cost-effective method of implementing a regional water supply system for the Sherman-Denison, Texas area. The Department requested that the Corps utilize the Section 22 funds allocated to Texas in FY 1984 and FY 1985 to initiate a 3-4 year study to inventory high flood hazard areas in this State. This study will identify land use, the potential for economic damages and loss of life, the frequency of significant and/or hazardous flooding, and likely alternatives for flood prevention measures within these high flood hazard areas. Once these studies are completed, we will be asking for the Corps' assistance on other essential elements of the Texas Water Plan including additional regional water supply studies, a study of the potential for use of some portions of flood storage in federally-constructed reservoirs for water supply, and a study of existing local single-purpose reservoirs to determine the feasibility of "add on" flood control storage or conversion of some of the conservation storage to flood control.

The Section 22 funded studies completed to date have contributed significantly to Texas' water resources planning and development program, but much work remains to be done. Therefore, the Department respectfully requests your support for an appropriation of $200,000, as authorized in the 1974 Water Development Act, to the Corps' FY 1986 budget for Section 22 studies in Texas, to continue the inventory high flood hazards in Texas, including identification of land use, the potential for economic damages and loss of life, the frequency of significant and/or hazardous flooding, and likely alternatives for flood prevention measures within high flood hazard areas.

BUREAU OF RECLAMATION INVESTIGATIONS AND PROJECTS

The Texas Department of Water Resources respectfully submits project testimony regarding Bureau of Reclamation projects in the State of Texas.

Responsibility for Statewide planning and development of water resources rests with the Texas Department of Water Resources. The Department has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Department has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water need and to provide National, State, and regional economic growth and stability. The Department of Water Resources maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects included in this statement are considered as integral elements in the State's present and future water resource development program.

BEDIAS LAKE PROJECT

The Department's planning work has shown that the Houston-Galveston metropolitan area is growing rapidly and will need additional water resources development in the immediate future in order to avoid water deficits. Bedias

Lake has been identified as a potential water supply project for the area and has been included in the State's plan for development since the middle 1960's. The Lake has been included as an element of the "continuing" plan to supply water for municipal and industrial purposes in the lower Trinity River Basin. The total future water requirements of the metroplex in excess of those which can be met by local supplies can be partially met from Bedias Lake.

The present administration has included in its FY 1986 budget proposal $395,000 for the third year of a four-year study program by the Bureau of Reclamation to investigate the hydrologic and economic feasibility of Bedias Lake. The future water supply needs of the Lower Trinity River Basin are increasing and we strongly request your consideration for the Bedias Lake study amount included in the President's budget for FY 1986.

COLORADO COASTAL PLAINS PROJECT

The Bureau of Reclamation is conducting this investigation in cooperation with the Department and the Lower Colorado River Authority, to determine the feasibility of water resources developments on the lower Colorado River. The primary purpose of this project is to meet the growing municipal and industrial water needs along the Texas Gulf Coast. The Department's planning studies indicate a need for this project before the year 2000.

The Texas Department of Water Resources supports the President's request for a total appropriation of $600,000 for FY 1986 to continue Stage II investigations for the proposed Colorado Coastal Plains Project.

SAN JACINTO RIVER PROJECT

The President's budget recommends $275,000 be provided in FY 86 to continue feasibility studies of two potential reservoir sites in the San Jacinto River Basin.

The San Jacinto River Basin and neighboring areas are growing rapidly. Much of the area has depended upon ground water to satisfy its municipal and industrial water needs in the past. The result has been a significant lowering of water levels within the area and severe land subsidence. Subsidence problems are extremely serious in that subsidence has aggravated

local area drainage and flooding problems and also subjects the people and property of this region to tidal surges in the event of hurricanes.

The Department's projections indicate that additional surface water supplies will be needed in the mid-1990's in order to meet the growing demands for municipal and industrial water. Thus, the Department supports the President's recommendation for funding in FY 86 to continue the San Jacinto River Project.

BIG SANDY PROJECT

The President's budget recommends $320,000 be provided in FY 86 to continue feasibility studies of the development of a potential reservoir in the upper Sabine River Basin. This project is needed to supply municipal and industrial water for the rapidly growing area that includes the cities of Marshall and Longview.

The Department supports the President's recommendation for continued funding of the Big Sandy Project in FY 86.

NUECES RIVER PROJECT

A total of $4,834,000 is included in the President's FY 86 budget for construction of recreation facilities and fishery management activities for the Nueces River Project. The Department supports the President's recommendation for funding in FY 86.

PALMETTO BEND PROJECT

A total of $500,000 is included in the President's FY 86 budget for completion of construction on the Palmetto Bend Project. The Department supports the President's recommendation for funding in FY 86.

SMALL PROJECT LOAN PROGRAM

The Department supports the President's recommended funding during FY 86 to the following small projects: Delta Lake Irrigation District ($521,000); Hidalgo County Irrigation District No. 1 ($500,000); and Hidalgo County Irrigation District No. 2 ($2,500,000).

CONCLUDING COMMENTS

The Texas Department of Water Resources sincerely appreciates this opportunity to provide testimony to the Committee and most respectfully urges the appropriation of funds as requested in order to accomplish properly coordinated, timely, and orderly development of these urgently needed water resource projects in the State of Texas.

STATEMENT OF BEAUMONT, TEX.

On behalf of the City of Beaumont, we respectfully request you and your Committee to grant on-going construction funds for the Taylor's Bayou drainage and flood control project. We recognize and appreciate your past assistance and urge you to continue the funding of this important project.

The requested amount for this year, $4.8 million, will assist in proceeding with a project that has been recognized as necessary since the late 1940's.

The City has experienced severe flooding on several occasions over the last thirty years. Although the Taylor's Bayou project will not solve flooding problems in Beaumont entirely, it will substantially improve flood control by opening a bottleneck of levees and canals. About 60 percent of Jefferson County's storm waters gravitate naturally to Taylor's Bayou. In 1979 and 1980 floods caused about $46 million worth of damage in Jefferson County.

The City and its people have not only supported the project by asking for Federal money but also have passed over $35 million in bond issues to support the area's drainage plans. Clearly, this project is essential to help protect our homes and businesses from the damaging floodwaters that have afflicted them over the last decades.

We appreciate the efforts of Congressman Jack Brooks on our behalf and lend our support to the $6.9 million requested this year for the operation and maintenance of the Sabine-Neches Waterway. This ship channel is essential to our Port, an integral part of our economy.

Thank you for your time and consideration of these projects.

STATEMENT OF SAM RAYBURN MUNICIPAL POWER AGENCY, TEXAS

I. Introduction

The United States Army Corps of Engineers' ("Corps") proposed appropriations for water resources projects includes, among several others, the Town Bluff Project on the Neches River in east Texas. The Corps proposes development of federal hydropower at the existing Town Bluff Dam, with the entire output of the hydropower facility to be sold by the Southwestern Power Administration ("SWPA") to Sam Rayburn Municipal Power Agency ("Sam Rayburn") as a preference customer.

Financing construction of hydropower facilities at the Town Bluff Project requires no appropriation from Congress; no appropriation is requested in the Corp's appropriations proposal. Rather, Sam Rayburn has agreed to pre-pay the entire cost of construction, which otherwise would be paid over time to the Southwestern Power Administration ("SWPA") as a component in the hydropower rate for the output of the project.

All statutory authorization necessary to proceed with development of federal hydropower is in place. What the Corps is seeking in its appropriations proposal is general congressional approval of the hydropower development and financing concepts for the Town Bluff Project. Sam Rayburn supports the Corps in seeking that approval for development of federal hydropower at the Town Bluff Dam, which is a continuation of the original construction and authorized purposes for the dam.

II. Project Description

The Town Bluff Dam and B.A. Steinhagen Reservoir Project was constructed by the Corps in 1951 for flood control, water supply, and recreation purposes. The project is in addition authorized for federal hydropower development. 59 Stat. 12, 18.

Town Bluff Dam (also known as "Dam B") was constructed on the Neches River in Jasper and Tyler Counties, Texas, about 1.5 miles

north of the Town of Town Bluff and 93 river miles north of the City of Beaumont. The drainage area for the project is approximately 7,570 square miles. Sam Rayburn Dam and Reservoir on the Angelina River, the main Neches tributary, lies 15 miles upstream of the Town Bluff Project. Sam Rayburn Dam has a power installation of 52 MW which is operated mostly for peaking power, with a maximum release of 10,000 cfs. The down-stream Town Bluff Dam and B.A. Steinhagen Reservoir re-regulate the flows resulting from up-stream releases for such peaking generation, and will continue to do so with the installation of generating capacity at Town Bluff Dam. Such installation will be by the Fort Worth District of the Corps.

The existing Town Bluff Dam consists of a gated spillway with six 40 X 35-foot gates and a 6,400-foot-long concrete lined overflow embankment dam. The reservoir has a usable storage of 94,000 acre-feet at EL 83.0, which is the normal maximum water level. The project is operated to provide water for irrigation, municipal and industrial water supply, and to control salt water intrusion up the Neches River. Operation of the existing project would not be altered by installation and operation of the proposed hydroelectric facility.

The proposed hydroelectric project consists of a power house containing two 3-MW generating units, which the Corps estimates will generate 35.9 Gwh/year and provide a dependable capacity of 4.1 MW. The power house will be located on the diversion channel used for the original dam construction. An environmental assessment of the Corps' recommended Town Bluff development concludes that because there will be no changes in the project operation, there will be no long-term adverse environmental effects.

III. Statutory and Legislative History

The original Town Bluff Project was authorized in the 1945

Rivers and Harbors Act, Section 2, 59 Stat. 18, which in pertinent part reads as follows:

> Sec. 2. The following works of improvements of rivers, harbors and other waterways are hereby adopted and authorized in the interest of national security and the stabilization of employment.... *** Provided further, That penstocks or other similar facilities adapted to possible future use in the development of hydroelectric power shall be installed in any dam herein authorized when approved by the Secretary of War upon the recommendation of the Chief of Engineers and of the Federal Power Commission, and such recommendations shall be based upon the proper utilization and conservation in the public interest of the resources of the region:
> ***
> Neches and Angelina Rivers, Texas; Senate Document Numbered 98, Seventy-sixth Congress;....

Since Senate Document Number 98, 76th Cong., 1st Sess. (July 19, 1939), is both adopted as part of the congressional authorization for the proposed Neches River projects, and constitutes the legislative history therefor, the pertinent language of that document reads as follows:

> The district engineers presents a general plan for development of the water resources of the lower Neches Basin. This plan provides for construction of two large storage reservoirs, one on the Rockland site on the Neches River, 38.5 miles above its junction with the Angelina River, and 164.5 miles above its mouth, and the second at the McGee Bend site on the Angelina River, 25.2 miles above its mouth, and for operation of the two reservoirs in the combined interests of navigation, flood control, water conservation, and power development. The plan also includes construction of two low-head power dams on the Neches River, one between the Rockland Dam and the mouth of the Angelina River and the second [Dam B or Town Bluff] below the mouth of the Angelina River. These dams would utilize the regulated flow from the upstream reservoirs to generate power and the lower dam [Dam B or Town Bluff] would reregulate the fluctuating discharges from upstream power plants to provide a uniform daily flow on the lower river. Id. at 4. Emphasis added.

Document No. 98 continues:

> The Board [of Engineers for Rivers and Harbors] has carefully considered the reports of the district and division engineers and the information presented at the hearing. There is a definite need for the control of floods in the lower Neches Valley as well as for the regulation of stream flow. *** The proposed two power regulation dams "A" and "B" [,Town

> Bluff,] on the Neches River below the Rockland Dam are an essential element of the general plan since they are necessary to utilize available head and to regulate the fluctuating discharges from the upstream power plants, to give a uniform daily flow to the lower river. Id. at 7. Emphasis added.

Thus the statutory and legislative history shows Town Bluff Dam (Dam "B") to be authorized for federal flood control, hydroelectric generation and other beneficial water uses. S.Doc. No. 98, 76th Cong., 1st Sess. (July 19, 1939). But power generating facilities were not constructed with the dam in 1951 because pre-construction studies indicated they were not economically justifiable at that time. See S.Doc. No. 98, 76th Cong., 1st Sess., 8-12 (July 19, 1939).

IV. Additional Statutory Provisions

A. DOE and FERC Concurrence

Under terms of the 1945 Rivers and Harbors Act, Section 2, 59 Stat. 12, 18, authorizing the construction of the Town Bluff Project, the concurrence of the former Federal Power Commission ("FPC") is required to proceed on the recommendation of the Chief of Engineers for installation of generating capacity at Town Bluff. Concurrence of the FPC was to be presented through FPC approval (1) of power sales agreements marketing the federal hydropower generated at the authorized projects, and (2) of rates for such sales. See S.Doc. No. 98, 76th Cong., 1st Sess., 8 (July 19, 1939); and 1944 Flood Control Act, 16 U.S.C § 825s.

The authority to market federal hydropower generated at dams operated by the Corps is set forth in the 1944 Flood Control Act, Section 5, 16 U.S.C. § 825s. However, in 1977 the FPC's function under the 1944 Rivers and Harbors Act, Section 2, and the FPC's rate approval function for sales of 1944 Flood Control Act federal hydropower, were transferred to the Secretary of Energy by the Department of Energy Organization Act ("DOE Act"), 42 U.S.C. § 7151(b). Moreover, the function of developing power sales agreements was transferred from the Secretary of the Interior to

the Secretary of Energy, to be exercised by the Power Marketing Agencies including the Southwestern Power Administration (42 U.S.C. § 7152(1), (2)). Therefore, the SWPA's power sales agreement for the output of the Town Bluff Project will constitute the recommendation of the FPC referred to in the 1945 Rivers and Harbors Act, Section 2, when confirmed and approved by final agency action of the Secretary or his designee under the 1944 Flood Control Act and the 1977 DOE Act.

B. Rate Components/Construction Costs

The SWPA's authority to sell the hydroelectric output of the Town Bluff Project under the 1944 Flood Control Act, Section 5, 16 U.S.C. § 825s, details that the disposition of such hydropower shall be "in such manner as to encourage the most widespread use thereof at the lowest possible rates to consumers consistent with sound business principles", and the rates are directed to be drawn as follows:

> Rate schedules shall be drawn having regard to the recovery (upon the basis of the application of such rate schedules to the capacity of the electric facilities of the projects) of the cost of producing and transmitting such electric energy, including the amortization of the capital investment allocated to power over a reasonable period of years.

The usual capital investment to be amortized is the cost of construction, which for Town Bluff will be pre-paid leaving only replacements to be so capitalized and included among future rate components.

C. Contributed Construction Funds

As to application of the contributed construction funds, the Corps has existing authority to receive contributed funds and to expend those funds for any authorized work of public improvement of rivers as follows:

> The Secretary of the Army is authorized to receive from private parties such funds as may be contributed by them to be expended in connection with funds appropriated by the United States for any authorized work of public improvement of rivers and harbors.... 33 U.S.C. § 560.

Whereas the installation of generating capacity at Town Bluff is an authorized work of public improvement of a river (1944 Rivers and Harbors Act, Section 2, 59 Stat. 18), and whereas expenditure of funds appropriated by the United States has been met not only in construction of the existing dam but also in recent appropriations (1985) for power development studies and other services aimed at construction of the generating facilities, it is appropriate to construct generating facilities at Town Bluff with contributed funds from Sam Rayburn.

D. Hydropower Sales Preference

An additional consideration for development of this federal hydropower project appears in the 1944 Flood Control Act, Section 5, 16 U.S.C. § 825s, with regard to "preference customers":

> Preference in the sale of such power and energy shall be given to public bodies and cooperatives.

Sam Rayburn is a public body organized as a political subdivision of the State of Texas. SWPA has recognized that Sam Rayburn is a preference customer and has selected Sam Rayburn as the preference customer for sale of the output of the Town Bluff Project. 49 Fed. Reg. 46924.

V. Current Project Plan

The plan for financing the installation of generating capacity at Town Bluff Dam involves the Fort Worth District of the Corps, the SWPA, and Sam Rayburn. Meetings have been held between Sam Rayburn and the Corps in Fort Worth and in Washington, D.C., as well as with the SWPA in Tulsa, Oklahoma. The result of these meetings has been the following plan:

1. The Corps and Sam Rayburn will enter into a Contribution Agreement whereby Sam Rayburn will totally fund the cost of construction (including design and services by the Corps) for installation of generating capacity at the Town Bluff Dam.

2. The Corps, Sam Rayburn, and an escrow entity to be named

will enter into an Escrow Agreement whereby the monies supplied for construction by Sam Rayburn will be deposited to the escrow account. Monies will be paid out of the escrow account as contributions under 33 U.S.C. § 560 to the United States Treasury and will be drawn therefrom as needed by the Corps.

3. Sam Rayburn will issue tax-exempt municipal bonds to finance the approximately $20,000,000 required for construction of the hydropower facilities. The bonds will be anchored by a power sales agreement between Sam Rayburn and SWPA for the hydroelectric output of the dam, but no amount of output is guaranteed.

4. The SWPA and Sam Rayburn will enter into a Power Sales Agreement whereby Sam Rayburn will receive the hydroelectric output of the Town Bluff Project for a period of 50 years. The rates for such output will be based on the costs of operation, maintenance, and replacements, as well as power marketing costs. The Power Sales Agreement will recognize that the construction cost rate component (see 16 U.S.C. § 825s) has been pre-paid under the Contribution Agreement.

5. The Corps will seek congressional approval of the commencement of construction of the hydropower facilities at Town Bluff Dam as authorized in the 1945 Rivers and Harbors Act, Section 2, without any appropriation of funds (such being unnecessary due to Sam Rayburn's funding the project). No construction will commence without such approval.

The above plan fits with existing legislation. However, the development of Town Bluff's hydropower potential (1) through pre-payment of construction costs under the Contributed Funds Act, and (2) financing such costs through tax-exempt municipal

financing has not been used in any previous federal hydropower development. Indeed, the plan, Contribution and Power Sales Agreements, were structured to comply with Treasury Regulations and Tax Code provisions governing the issuance of tax-exempt municipal bonds. Thus, under the plan, the United States would construct, own, and operate the Town Bluff power generating facilities with the benefit to Sam Rayburn being a power sales agreement for the output of the project during its beneficial life (50 years). In essence, Sam Rayburn is pre-paying the construction cost component of the federal hydropower bill for the output of the Town Bluff Project.

With the expectation that the above plan for Town Bluff could be implemented, Sam Rayburn filed its Financial Proposal (October 1, 1984) with the Corps, and indicated to the SWPA that it wished to be the preference customer for purchase of the output of the Town Bluff Project (Letter of September 28, 1984, from R.D. Willis, Executive Director of Sam Rayburn, to W. Bowers, Power Marketing Director, SWPA). Thereafter, the Corps and the SWPA respectively sought preliminary proposals for construction cost contributions and applications from additional interested power sales preference customers. 49 Fed. Reg. 39892. Notably, no additional financial proposals and no additional power applications were filed with either the Corps or SWPA. Consequently, Sam Rayburn was selected by final rulemaking to be both the financial sponsor and the preference customer for the Town Bluff Project. 49 Fed. Reg. 46924. As part of this selection Sam Rayburn agreed that the existing operation of the Town Bluff Project for the benefit of the Lower Neches River Valley Authority (LNVA) should not be impacted or changed, and LNVA has indicated to the Corps that with its receipt of contract amounts of water so protected it has no objection to the development of federal hydropower at the Town Bluff Dam for the benefit of Sam Rayburn.

VI. Private Financing of Federal Power Resources

A major concern to "public bodies" as referenced in the 1944 Flood Control Act, Section 5, 16 U.S.C. § 825s, is that such entities remain preference customers for future public development of public hydropower resources by the Federal Government. The potential for financing by preference entities could restore the federal development of public water resources without burdening the federal budget. In regard to such development of federal hydropower resources, the American Public Power Association (APPA) has taken the following position (APPA Resolutions June 12, 1984):

> WHEREAS, the historic policy of federal rather than private development of our national hydroelectric resources has ensured that these resources were developed in a cohesive and comprehensive manner designed to capture the maximum possible benefits for the public, and
>
> WHEREAS, due to current economic conditions, federal development may not be possible and thus to meet local and regional needs, alternatives to federal development will be require, and
>
> WHEREAS, existing federal dams are public resources, and undeveloped and underdeveloped water and power potential should be preserved for public use and benefit, and therefore development alternatives must be consistent with long-standing federal policy of providing benefits of these resources directly to the public rather than passing these benefits to private interests,
>
> NOW, THEREFORE, BE IT RESOLVED: that the American Public Power Association continues to vigorously support federal financing and development of all economically viable hydroelectric projects at both federal dams and at undeveloped sites, but recognizes that in some cases alternatives to federal development must be found; and
>
> BE IT FURTHER RESOLVED: that, in the absence of federal funding, APPA will support other proposals for nonfederal funding of federal hydroelectric projects ("cost sharing") as long as such proposals are consistent with:
>
> 1. existing preference laws;
> 2. federal control over development of federal water and power resources;
> 3. federal marketing of power from federal projects; and
> 4. cost-based pricing of federally-developed water and power resources.

In light of the above resolution, and of the interests of preference customers for federal hydropower, Sam Rayburn has

coordinated the development of the financing plan for the Town Bluff Project with the APPA and with the Southwestern Power Resources Association (SWPRA). Both the APPA and the SWPRA agree with and support the development of federal hydropower at the Town Bluff Dam using contributions from Sam Rayburn, a preference customer, especially because the hydropower resource, the generators and the dam, will remain the property of the United States and be in no way lessened as an available public resource. Letters have been received by Sam Rayburn, the Corps and the SWPA, from the APPA and the SWPRA supporting the Town Bluff hydropower development plan.

VII. Conclusion

For the above reasons Sam Rayburn asks that general approval be given for continuation of the Town Bluff Project as proposed for hydropower development. The pre-payment of construction costs fully meets federal budget concerns about long pay-back periods for capitalized amounts, and the rates for the power and energy sold to Sam Rayburn as the project output will fully recover operations, maintenance, replacements, and power marketing costs on a continuing basis. This project will benefit the Cities of Jasper, Liberty and Livingston, Texas, and the Town of Vinton, Louisiana, as well as Sam Houston, Jasper-Newton, and Houston County Electric Cooperatives in east Texas. Therefore, on behalf of these preference entities, as well as the Sam Houston, Jasper-Newton, and Houston County Electric Cooperatives which will purchase some of the Town Bluff output through Sam Rayburn, Sam Rayburn asks for the general congressional approval which both it and the Corps would like to have if the project is to proceed.

STATEMENT OF BRAZOS RIVER HARBOR NAVIGATION DISTRICT, TEXAS

Again, Mr. Chairman, and for the fifth consecutive year, we are requesting "new start" funds to get the construction of our 45 Foot Channel Improvement Project underway.

Last year we almost made it. You agreed, the full Committee agreed and the Senate agreed. The House Subcommittee agreed, the full House Committee agreed and the full House agreed--all agreed to fund "start up" of our project.

As you know we got cut in the Conference Committee, as did all "new start" requests.

But we have great and enduring faith in the system--so we are here again--sincerely urging that you include "new start" funds for the Freeport 45 Foot Project in your FY 86 appropriations.

Mr. Chairman, we are aware that the final decision on the improvement of the nation's port system is not controlled entirely by this Subcommittee. However, this Subcommittee is the entrance gate to the appropriations channel through which all must pass. Your inclusion of Freeport for "new start" in FY 86 is very critical to the final realization of this project.

Your favorable action on this request is highly justified:

1. The narrow one-way traffic channel is a relic of the 19th Century.

2. Modern day ships have outgrown the shallow channel. Many ships cannot enter or depart the channel fully loaded.

3. Further delay in funding perpetuates inefficiency and drives transportation costs upward.

4. The benefit/cost ratio of this project is among the highest of any approved new start project in the entire nation. This is not a rip-off proposition. This is a value received project.

5. While the local economy will benefit during construction and after completion, other areas of the nation will benefit also upon completion.

a) The nation's heartland can ship its grain to the far reaches of a hungry world more expeditiously and more economically.

b) The present necessity of "lightening" larger oil tankers in the gulf offshore and using smaller ships to make final delivery to dockside for offloading can be eliminated.

c) The Department of Energy will be assured of more economic and speedier handling of its millions of barrels of Strategic Petroleum Reserves in nearby Bryan Mound, whether for continued storage fill or for drawdown and distribution during national emergency.

d) Many chemicals processed in Freeport's great petrochemical complex can depart for world markets with more safety and efficiency.

As local non-federal sponsor, the Navigation District has tried every possible plan known to us to obtain start-up funds for this project.

When we were not included in the FY 1980 appropriations, we proposed to you to advance up to $10,000,000 from local interests to carry the project until construction funds were appropriated by the Congress.

In accord with 33 U.S.C. 561 you approved this advance in your FY 1981 Appropriations Bill, but the Corps of Engineers declined to start the project, apparently due to uncertainty of future funding policies of the Congress on new start water projects.

Later we agreed with the Corps of Engineers to undertake a 50/50 cost sharing on the relocation of the North Jetty as a usable increment of the total project at an estimated cost of approximately $26,000,000. That offer was made by us because of the critical condition of the channel entrance jetties.

Although the jetty relocation will not increase the depth of the existing channel, it will widen the channel between the jetties and provide safer operating conditions for shallow draft vessels that must share the channel with larger ships. Further, relocation of the North Jetty is necessary for ultimate construction of the 45 Foot Project and would constitute the first phase of construction if the overall project is undertaken.

Subsequent to the time that we agreed to cost share the North Jetty relocation on a 50/50 basis we were contacted by the Acting Assistant Secretary of the Army (Civil Works) inquiring if we would be willing to finance 70% of the project's total capital cost. In response to that inquiry we replied that:

> "In view of the fact that approximately ninety-eight percent (98%) of the tonnage shipped through the Freeport Channel passes over privately-owned wharves and results in no revenue to the Navigation District, with the United States receiving 100 percent of the customs revenue generated by imports, the small percent of the total revenue generated by the Freeport Channel that is received by the Navigation District could not finance seventy percent of the channel improvement cost.
>
> "The State statutory limitation of ten cents ($0.10) on each $100 evaluation of taxable property on the amount of taxes that can be levied, will not permit the levee of a tax rate that would produce sufficient tax revenues to finance the project.
>
> "Federal statutes will not permit the Navigation District to levee tariffs on the use of the channel for channel improvement purposes.
>
> "The Navigation District can undertake this proposed cost-sharing approach to the total project only if enabling legislation applicable to all ports permits each port authority to levee user tariffs on vessels using the Navigation District channel; permits the diversion of some portion of custom fees for that purpose; or provides some other statutory authority applicable to all ports that would generate revenue from users of the facility and permit the continuation of competition among public ports and provide a source of revenues that would enable the local non-federal sponsor to issue revenue bonds to pay its share of the construction cost of the project.

"It is further understood that if the Brazos River Harbor Navigation District cost-sharing proposal is acceptable to the Assistant Secretary of the Army for Civil Works, he will recommend to the Office of the Management and Budget that an appropriate request for funds to support the Freeport Harbor project construction be included in the President's budget for Fiscal Year 1986. As previously recognized, if legislation is enacted which changes cost sharing for the Freeport Harbor project, such cost-sharing provisions will supersede this financial agreement."

Mr. Chairman, we are aware of the uncertainty of the method of future funding of "new start" water projects. We are aware that there are problems to be solved and decisions to be made by the Congress that are not controlled by this Subcommittee.

In the meantime, we have adequate funds on hand to carry this project well into FY 1987.

We urge you to make a "new start appropriation" for this project now. It is recognized by all who are involved as not only having a high priority nationwide, but also having an element of urgency which is continuously increasing.

Statement of Gulf Intracoastal Canal Association

My name is J. Duane Orr. I am appearing before you for the first time as President of the Gulf Intracoastal Canal Association, with principal offices in Austin, Texas. It has been Mr. Miller's and my privilege to appear before you each year for a number of years. Mr. Miller is now Chairman of the Board of the Directors of the Gulf Intracoastal Association (GICA). Mr. Miller and I appear before you today supporting the appropriation of adequate funds for the Corps to continue maintaining the Gulf Intracoastal Canal Waterway to its authorized dimensions to assure its continued efficient operation. Many of the shallow-draft and deep navigation projects are represented by well-informed witnesses who will appear during the course of your hearings. Therefore, my function will be to depict briefly a broader picture of the impressive development of the Intracoastal Waterway which has occurred along the Gulf Coast.

REQUESTED APPROPRIATIONS

I appear before you today in support of the appropriations of maintenance funds totalling $26,314,000 and study funds in the amount of $550,000, both of which are included in the President's budget. This is not to imply that additional funds within the limits of the Corps of Engineers capability are not needed, but because of the necessity to limit federal expenditures, the Association would be satisfied with the appropriation of the funds recommended in the President's budget.

PURPOSE AND HISTORY OF GULF INTRACOASTAL CANAL ASSOCIATION

Our Gulf Intracoastal Canal Association, one of the oldest Associations, was organized in 1905, almost 80 years ago. Through the years it has cooperated actively with Congress and Government agencies in the creation of the Gulf Intracoastal Waterway system (GIWW), a complex of navigation facilities which has come to be regarded as the most remarkable artery of transportation in America.

The GIWW has achieved by far the highest ratio of benefits to costs of any waterway in the nation--or of any other form of

transportation. Annual commerce on the waterway in 1983 was 85,524,236 tons which exceeds by over seventeen times the figure of 5,000,000 tons which was originally predicted for the waterway when it was authorized. Commerce moved thru waterway in 1983 totalled 15,582,167,818 ton miles. It is a noteworthy fact that this Canal returns each year more than $26 in savings in transportation costs for every dollar expended by the Federal Government in the construction, maintenance, and operation of this waterway.

I am aware that these facts are known to many members of this Subcommittee, who have been close to this subject for years; but I review them briefly here to place in proper perspective my appearance before you in behalf of adequate appropriations to continue the worthwhile service being performed by the Intracoastal Canal and related navigation projects. I have no hesitancy in asserting that this past record of service provided by the GIWW fully justifies your favorable consideration of its needs today.

NEED FOR FUTHER WIDENING AND DEEPENING OF THE GULF INTRACOASTAL WATERWAY

With respect to the Gulf Intracoastal Waterway itself, our most important objective in the future will be the deepening and widening of the main canal to accommodate the rapid increase in waterbourne commerce. Congress has already authorized new dimensions for the busy segment between New Orleans and Houston, with increases from 12 to 16 feet in depth and from 125 to 150 and 200 feet respectively in width. We are confident that the Subcommittee shares our awareness of importance of this authorized project, but we do not request funds to initiate construction at the present time, since local problems have yet to be resolved. Inasmuch as the authorized improvements span a distance of 3[illegible] miles, problems of rights-of-way and pipeline relocations and other items of local corporation such as the "hold harmless agreement" are of course formidable, but we intend to have them resolved. Our request now is only that the Subcommittee keep in mind the importance of this undertaking until such time that we seek funds to start construction.

Meanwhile, however, it is a notable fact that during the period since those new dimensions were authorized in 1966, the commerce moving over the Waterway has more than doubled. In other words, if Congress found it necessary to authorize a considerable deepening and widening when the traffic was less than half of what it is today, what might be said of the waterways actual requirements now? For this reason we secured authority from Congress to empower the Corps of Engineers to up-date those studies which led to that authorization--to determine if present conditions do not in fact require still greater waterway dimensions.

We are recommending to this Subcommittee that it provide funds in the amount of $550,000 which is needed by the Corps of Engineers and is included in the President's budget to bring this important investigation and study to an expeditious conclusion.

INTERCONNECTING WATERWAYS AND THEIR IMPORTANCE TO THE NATION

Virtually all navigation projects on the Gulf Coast--both deep-draft and shallow-draft channels--either coincide with, or are tributary to, the Gulf Intracoastal Waterway, and for this reason our Association has a vital interest in their continued development and improvement. Accordingly, we earnestly request that the Subcommittee give favorable consideration to the needs of all such navigation projects.

One of the most important objectives of the Gulf Intracoastal Canal Association is the extension of navigation into the hinderlands through the development of the principal tributaries. Of major importance in the eastern Gulf is the Tennessee-Tombigbee Waterway which was recently completed and will be dedicated later

this year. Another project of major significance to inland navigation is the completion of the Leland Bowman lock to replace the obsolete Vermillion lock. This new lock was opened to traffic recently and dedicated less than ten days ago. Continuing the construction on lock and dam 27 is also of importance to this Association since it will benefit traffic on GIWW. Other projects that I have not specifically mentioned are equally important and will benefit the Nation as they are completed.

NEED FOR ADDITIONAL ACCESS TO THE GULF FOR ENERGY RELATED INDUSTRIES

As important as the tributary streams into the hinterlands are to inland navigation, access channels extending outward to the Gulf, especially in view of the increased activity in offshore energy development are equally important to this Nation. Improvement of existing facilities, and construction of new and deeper channels as required is essential to this development--as well as increased dimensions for the progressive Gulf Coast ports. The Gulf Intracoastal Waterway will be a vital part of this activity, and our Association urges the Appropriations Subcommittee to be promptly responsive to such need.

FUTURE LONG RANGE PROJECT NEEDS FOR THE BENEFIT OF THE NATION

Of significance to the Association's long-range program are two projects in Florida. One is the Cross-Florida Barge Canal, a project designed to connect the Gulf and Atlantic inland waterway systems into a continuous navigation facility extending from the Mexican border to the northeastern area of the United States. We deplore the arbitrary action of the Administration in 1971 in halting construction of this project--on which more than fifty million dollars had been expended to bring it to one-third completion--but it remains our conviction that this connection is needed, and we are hopeful of its eventual re-consideration. The other project is the extension of the Gulf Intracoastal Waterway from St. Marks to Tampa Bay--the missing link in a protected inland navigation channel which otherwise extends along the entire Gulf. This key project should be constructed in order to complete the system along the Gulf Coast.

APPROPRIATION OF FUNDS FOR STUDIES AND INVESTIGATIONS

Funds for studies and investigations, are as important as funds for construction, for without adequate appropriations in those categories a realistic and beneficial public works program cannot be perpetuated. Funds in the amount of $550,000 have been requested by the New Orleans and Galveston Districts to continue the ongoing study of further improvements to the waterway between New Orleans and Houston. This request has been included in the budget. We wholeheartedly support this requested appropriation.

Sufficient funds for rehabilitation work should likewise be supplied when required in order that the inland navigation system can operate at maximum efficiency.

CONSTRUCTION AND MAINTENANCE FUND REQUIREMENTS

Although requests for construction funds are customarily accorded, the greatest emphasis in these hearings, I would like to stress also the over-riding importance of appropriations for maintenance. Insufficient funds for maintenance have many times reduced the service rendered by existing rivers and harbors projects, with a resultant loss in the benefits which became available upon the completion of such projects.

PROPOSED CHANGES IN NATIONAL WATERWAY POLICIES

Even though continued Federal funding of this vital Gulf Intracoastal Waterway is of primary importance, perhaps the most important issues confronting us now are those currently under consideration by Congress. We are disturbed by pending legislation which would

provide for an escalation of "user charges" on our inland waterways, and the assessment of "cost-sharing" or "cost-recovery" obligations on "local sponsor of projects" which actually are not local in character but are regional and even national in significance. All such proposals requires passing added costs along to the consumers, aggravating inflationary pressures which beset our economy. Such added costs will seriously imperil the role of navigation in the competitive market place of transportation. These issues are of major concern to all of us who are involved in the effort to develop and preserve a balanced transportation system to serve the American people with a maximum degree of efficiency.

BUDGET CONSTRAINTS AND POTENTIAL IMPACT ON USERS OF THE GIWW

We realize that during this period of severe Budget constraints the problems confronting Congress are indeed formidable, and that a critical scrutiny must be applied to every budgetary item. But we respectfully recommend that a long-range view be taken--a view of the potentially serious consequences which would be suffered with the imposition of additional burdens on the "users" and "local sponsors" of our national waterways system.

Congress has historically supported waterways which are accessible to all as a matter of vital national interest, and this far-sighted view has enabled our Nation's waterways to become the best in the world. The assessment of additional charges on the users, and on those who participate in the development of our waterways, could have a devastating effect on struggling marginal operators and on many small ports which depend on the waterways for economic survival. We earnestly urge that Congress give thorough and deliberate attention to the gravity of this problem.

I appreciate the opportunity to appear before you today in support of the Gulf Intracoastal Canal Association's program, which, succinctly stated, is to promote the economic and industrial growth as well as recreational development of the Gulf Coast through low-cost water transportation.

Statement of Port of Corpus Christi Authority, Texas

My name is Harry G. Plomarity. I am Executive Director for the PORT OF CORPUS CHRISTI AUTHORITY of Corpus Christi, Texas, the local sponsor for the federally authorized Corpus Christi Ship Channel, Texas Project.

REQUEST FOR FUNDS

I appear before you today requesting that the 99th Congress 1st Session, appropriate the following funds of which all or part are included in the President's budget for FY86.

A. FUNDS TO CONTINUE CONSTRUCTION OF THE AUTHORIZED 45-FOOT PROJECT
Appropriate $9,600,000 to continue deepening of the CORPUS CHRISTI SHIP CHANNEL PROJECT, pursuant to the 45-foot authorization (Senate Document No. 99 Public Law 483, dated August 13, 1968).

B. FUNDS FOR OPERATION AND MAINTENANCE OF THE C.C. SHIP CHANNEL PROJECT
Appropriate $4,880,000 to continue operation and maintenance of the CORPUS CHRISTI CHANNEL PROJECT during FY86. The Corps has a capability of $5,680,000 for maintaining the Corpus Christi Ship Channel, which is $800,000 more than the recommendation in the President's budget.

DESCRIPTION OF AUTHORIZED BUT INCOMPLETED IMPROVEMENTS

The following authorized improvements are yet to be completed:

A. Deepening the Corpus Christi Inner Harbor channels and basins from Beacon 82 (Mile 21.90) which is about one mile seaward of the Corpus Christi Harbor Bridge at the entrance to the Inner Harbor to and including the Viola Turning Basin (Mile 31.60) at the head of navigation from the present existing 40-foot depth to its authorized 45-foot depth.

   A contract has been awarded to complete the authorized improvements between Mile 21.90 and Mile 26.10.

B. Widening the Tule Lake and Viola Channels from the existing 200-foot bottom width to the authorized 300-foot bottom width channel.

C. Enlarging the Chemical Turning Basin (work included in item A above), Tule Lake and Viola Turning Basins to provide a minimum ship turning diameter of 1,200 feet in each basin.

D. Constructing levees, dikes, weirs, drainage canals, bridges, etc. necessary to contain the dredged materials and return the effluent to the ship channel. Construction of necessary levees and dikes for the next dredging contract are complete. (See Table No. 1 for levee construction completed and limits of work in next dredging contract).

STATUS OF AUTHORIZED IMPROVEMENTS TO THE CORPUS CHRISTI SHIP CHANNEL

All improvements to the Corpus Christi Ship Channel Project (formerly Port Aransas-Corpus Christi Waterway) authorized prior to the 90th Congress, 2nd Session are essentially complete. Table No. 1 below shows the existing, the completed, and the authorized dimensions of the respective reaches of this project.

TABLE NO. 1
CORPUS CHRISTI SHIP CHANNEL
EXISTING AND AUTHORIZED WATERWAY DIMENSIONS
(AS OF APRIL 1, 1985)

SECTION OF WATERWAY	EXISTING DIMENSIONS (IN FEET)		AUTHORIZED DIMENSIONS (IN FEET)	
DESCRIPTION	DEPTH M.L.T.	BOTTOM WIDTH	DEPTH M.L.T.	BOTTOM WIDTH
OUTER BAR CHANNEL	X	X	47	700
JETTY CHANNEL:				
OUTER END JETTY CHANNEL TO JETTY ENTRANCE	X	X	47 TO 45	700 TO 500
BETWEEN JETTIES	X	X	45	500
INNER BASIN AT HARBOR SLANG	X	X	45	700 TO 1200
INNER BASIN TO FERRY LANDING AT PORT ARANSAS	X	X	45	500
PORT ARANSAS TO LA QUINTA CHANNEL JUNCTION	X	X	45	500
LAY BERTHS - PORT INGLESIDE	X	X	45	150
LA QUINTA JUNCTION TO CORPUS CHRISTI	X	X	45	400
LA QUINTA CHANNEL	X	X	45	300
LA QUINTA TURNING BASIN	X	X	45	900X1200
CORPUS CHRISTI TURNING BASIN	(2) (1) 40	1000	45	800
INDUSTRIAL CANAL	(2) (1) 40	400	45	400
AVERY POINT TURNING BASIN	(2) (1) 40	1000	45	975X1050
TULE LAKE CHANNEL (AVERY POINT TO CHEMICAL TURNING BASIN)	(2) (1) 40	350	45	400 MIN.
CHEMICAL TURNING BASIN	(2) (1) 40	920 DIA.	45	1200 DIA.
TULE LAKE CHANNEL (CHEMICAL BASIN TO TULE LAKE BASIN)	(1) 40	200	45	300
TULE LAKE TURNING BASIN	(1) 40	900	45	1000X1200
VIOLA CHANNEL (TULE LAKE BASIN TO VIOLA BASIN)	40	200	45	300
VIOLA TURNING BASIN	40	700 TO 900	45	1200 DIA.

X WATERWAY COMPLETED TO AUTHORIZED DIMENSIONS
(1) LEVEE CONSTRUCTION COMPLETED
(2) DREDGING CONTRACT AWARDED

DESCRIPTION OF CONSTRUCTION AND MAINTENANCE ACTIVITIES IN PROGRESS

A. DREDGING OF THE 45-FOOT INNER HARBOR PROJECT

1. A disposal plan acceptable to the Federal Agencies, although not a 50-year plan as originally proposed for disposing of the dredged materials from the widening, deepening, and maintaining the Inner and the record of decision by the Division Engineer has been filed with EPA.

2. Two levee construction contracts have been completed for containing the dredged materials and returning the effluent to the ship channel pursuant to the approved plan. Work on both contracts were completed ahead of schedule. Construction of weirs are included with dredging contract which was recently awarded.

3. Soil borings for the next levee contract, which is planned for FY86 have been secured. Plans are being prepared for this construction later this year.

4. A dredging contract for deepening the easterly reach of the inner harbor between Mile 21.90 and Mile 26.10 has been awarded. With completion of this dredging, prospects for waterborne commerce at the Port of Corpus Christi will be significantly enhanced.

TO ACCOMPLISH THE ABOVE WORK AS THE CORPS HAS SCHEDULED IT, WE URGE THAT CONGRESS APPROPRIATE THE $9,600,000 WHICH REPRESENTS THE CORP'S CAPABILITY FOR FY86 AND THE PRESIDENT'S RECOMMENDATION

B. OPERATION AND MAINTENANCE OF THE CORPUS CHRISTI SHIP CHANNEL PROJECT

A dredging contract for maintaining the Corpus Christi Bay Section of the Ship Channel has been awarded with work to start soon. Maintenance dredging of the LaQuinta Channel and Basin is scheduled for June 1985.

TO ASSURE ADEQUATE MAINTENANCE OF AUTHORIZED PROJECT DEPTHS, THE PORT AUTHORITY SUPPORTS THE PRESIDENT'S BUDGET RECOMMENDATION OF $4,880,000 FOR FY86 ALTHOUGH THE BUDGETED AMOUNT IS $800,000 LESS THAN THE REPORTED CAPABILITY OF THE CORPS OF ENGINEERS

C. REVIEW REPORT ON FURTHER IMPROVEMENTS TO THE C.C. SHIP CHANNEL PROJECT

Information necessary to prepare a Review Report on requested modifications and improvements to the Corpus Christi Ship Channel Project pursuant to the House Public Works Committee resolution adopted on

September 19, 1972 has been completed. Preparation of the Review Report awaits Congress establishing a policy on "user charges" and a policy on "cost recovery" for the Nation's waterways.

WE URGE THAT THIS STUDY WHEN PREPARED, BE GIVEN SPECIAL COSIDERATION AND THE RECOMMENDED IMPROVEMENTS BE "GRANDFATHERED" SINCE CONGRESS AUTHORIZED THE PREPARATION OF THIS STUDY LONG BEFORE ANY CONSIDERATION WAS BEING GIVEN TO REVISING THE NATION'S LONG ESTABLISHED WATERWAY POLICIES. WE ALSO URGE THAT THE CORPS REPORT BE EXPEDITED FOR CONGRESSIONAL APPROVAL ONCE USER CHARGES AND COST RECOVERY LEGISLATION HAS BEEN ADOPTED

JUSTIFICATION FOR CONGRESS APPROPRIATING THE RECOMMENDED FUNDS

According to the latest Corps statistics (1983) the PORT OF CORPUS CHRISTI ranks second in commerce in Texas and among the top ten Ports in the Nation in total waterborne commerce. In 1984, port commerce totalled 52,067,672 tons-up from 47,200,479 tons (PCCA statistics) in 1983. This represents 10.3 percent increase in tonnage following a steady decline between 1975 and 1982.

The decline in waterborne commerce at the Port of Corpus Christi during recent years can be attributed to three factors; general worldwide economic conditions, sharp reduction in crude oil imports, and Corpus Christi's loss of a major share of its grain exports due to an explosion at the Corpus Christi public elevator which put the elevator out of service for almost two years. Since the grain elevator returned to service, grain exports have been far below normal.

Vessel traffic (ships and barges) showed a 9.0 percent increase in 1984 over 1983. Crude oil imports and coastwise movements of petroleum products showed about a 3 percent increase in 1984 over the previous year. However, dry bulk imports and exports for the same period increased 124 percent which explains the 10.3 percent net increase in Port tonnage in 1984 over 1983.

TABLE NO. II
WATERBORNE COMMERCE AND TRAFFIC
CORPUS CHRISTI SHIP CHANNEL PROJECT

	TOTAL WATERBORNE COMMERCE & TRAFFIC (ALL DIVISIONS)			CORPUS CHRISTI WATERBORNE COMMERCE & TRAFFIC (INCLUDING INNER HARBOR)		
	COMMERCE (SHORT TONS)		TOTAL (2) VESSEL TRAFFIC (ONE WAY ONLY)	COMMERCE (SHORT TONS)		CORPUS CHRISTI TRAFFIC (2) (ONE-WAY ONLY)
YEAR	U.S. PORTS OF ENTERED (1)	PORT OF CORPUS CHRISTI		U.S. PORTS OF ENTERED (1)	PORT OF CORPUS CHRISTI (1) (2)	
1975	(A) 41,290,771	44,606,135	7406	(A) 35,478,454	37,945,544	5500
1976	43,492,959	46,293,793	7033	38,558,753	43,432,049	4782
1977	56,041,113	60,699,825	(a) 5446	48,732,810	53,705,517	(a) 4761
1978	54,678,296	61,246,725	(a) 6500	46,554,601	54,611,337	(a) 5529
1979	55,597,104	60,846,745	(a) 6991	46,422,792	54,121,877	(a) 6168
1980	45,087,364	53,506,420	(a) 7408	39,307,016	48,852,788	(a) 6822
1981	42,016,730	50,310,474	(a) 6786	39,148,522	47,545,612	(a) 6395
1982	37,993,976	43,152,465	(a) 5832	36,186,072	41,497,550	(a) 5500
1983	39,131,338	47,200,479	(a) 6374	-	45,363,644	(a) 6100
1984	-	52,067,672	(a) 6942	-	50,035,776	(a) 6630

(1) Statistics of the Port of Corpus Christi Authority. Port Authority records are maintained slightly different from those of the Corps of Engineers..

(2) Corpus Christi Commerce and Traffic includes the Corpus Christi Inner Harbor, Port Ingleside, the La Quinta Channel and Rincon Pass. Harbor Island Commerce and Traffic is shown separately, but it is also included in the total waterborne commerce for the Port.

(3) Certain military cargoes and bunkers are excluded from the Corp's statistics. The Port includes all cargo and bunkers which move across the docks, but bunkers loaded on board ships from barges are counted as foreign cargo. The Port of Corpus Christi Statistics are based upon actual records of cargo or of cargo manifests.

(a) From 1972 to 1975 the Bureau of the Census failed to report most of the bauxite ore imported by by Reynolds Metal Company.

(b) Beginning in 1977 each barge is counted separately, but tugs handling the tows are not included in this total.

CONCLUSIONS:

Prior to 1983 and 1984, waterborne commerce and traffic shown on Table II above declined each year beginning in 1978 due to economic condicions and other factors. However in 1984, commerce at Corpus Christi increased to 52,067,672 tons. This waterborne commerce fully justifies all previous appropriations which Congress has made to construct and maintain the PORT OF CORPUS CHRISTI since it was opened to world commerce in 1926. However, Congressional funding will continue to be needed to improve and maintain the ship channel to accommodate larger vessels and increased traffic in the future.

The importance of the PORT OF CORPUS CHRISTI to the Nation's international trade and world commerce clearly indicates that the public interest will best be served if excessive "user fees" are not assessed Port users. But, if Congress in its wisdom accepts the user fee concept, such fees must be based on the value of the cargo lifted and not on cargo tonnage. If user fees are based on cargo tonnage, grain exports will become non-competitive in the world market. Basing user fees on cargo tonnage will defeat the needs that this Nation has to export large quantities of grain, agricultural products and other bulk commodities to help improve the Nation's balance of payments.

OPPOSITION—TEXAS WATER PROJECTS

STATEMENT OF TEXAS COMMITTEE ON NATURAL RESOURCES

ROCKLAND RESERVOIR

Texas Committee on Natural Resources opposes any appropriations of funds for Rockland Dam Project because it is not needed. It would drown more than 100,000 acres of timber, and would ruin an even larger acreage of natural ecosystem including the downstream bottom lands which have long depended on the natural floods for the maintenance of their plant and animal life.

Nobody needs Rockland water in the next several decades. Rockland Dam would be within 50 miles of Sam Rayburn Reservoir which inundates about the same acreage, but is scarcely utilized for water supply. Further east, on the Sabine, lies Toledo Bend Reservoir, over twice as large, with 848 million gallons a day, only 1 mgd of which was utilized as recently as 1980, according to Army Corps figures.

The dam would deprive hundreds of thousands of acres of forest downstream from the floodwatering and nutrients which have nourished them. These forests include four units of the Big Thicket National Preserve.

Rockland Reservoir would inundate 126,500 acres of some of the best wildlife habitat remaining in the south, ruining the hunting for thousands of local and distant residents, and impairing this important aspect of a way of life which has been dear to these hunters and their fathers and grandfathers.

SAN JACINTO PROJECT

Texas Committee on Natural Resources opposes any funding for this project on the following grounds:

1. The proposed reservoir is not presently needed, nor will it be needed in the future if proven water conservation measures and alternatives are implemented. Examples of these are as follows:

   a. The application of a progressive rate structure for users. Those who use more water should pay a higher rate per unit than those who use less.

   b. The construction of a pipeline from Toledo Bend Reservoir, Sam Rayburn Reservoir, or Lake Livingston in order to supply projected water needs. Toledo Bend Reservoir is presently producing 848 million gallons of water per day but selling only 1 million gallons.

2. The project will invariably cost the taxpayer.

3. The proposed project would permanently ruin the natural values found in the flood plains of the East Fork of the San Jacinto River and Winters Bayou, particularly the Winters Bayou Natural Area. Elimination of this wildlife habitat cannot adequately be compensated for. These areas contain good examples of disappearing plant associations, including Black Gum/Water Oak/ American Holly, and a wide diversity of wildflowers, including the cranefly orchid, coral root orchid, twayblade and many others. The great blue and little blue herons, wood ducks and pileated woodpeckers nest there.

4. Both streams are very scenic and are providing recreational uses such as canoeing, hiking, fishing and camping. The Lone Star Hiking Trail crosses both Winters Bayou and East San Jacinto River and is heavily used. These bottomlands contain large numbers of whitetail deer, feral hogs, and squirrel, providing excellent hunting recreation.

5. The elimination of these recreational opportunities as well as the displacement of hundreds of families, will increase the incidence of crime and other social and psychological problems.

Attached is a petition signed by taxpayers in the vicinity of the San Jacinto Project opposing that project.

BIG SANDY RESERVOIR

Two new events should toll the death knell of the Big Sandy Dam Project, Texas;

-Longview Water Advisory Committee has recommended that the City of Longview pursue state water permits for a proposed Little Cypress Reservoir and a Prairie Creek Reservoir. The City Council so acted.

-The surveyors have discovered that the only way to prevent the proposed Lower Big Sandy Reservoir from submerging the Glades, one of the most significant natural areas in East Texas, would be to build dikes between Big Sandy Creek and the Glades. Dikes would ruin the bank and forest along Big Sandy Creek and the southwest side of the Glades; and would impair the natural qualities of the Glades themselves.

The City Manager of Longview states the following as the practical effect of the city's move toward Little Cypress Reservoir.

"We've probably eliminated that (Big Sandy) as an alternative".

Longview Morning Journal, 2/20/85, Copy attached hereto.

This conclusion is valid regardless of the fact that the city is still free to pursue Big Sandy, also. The city cannot support the other reservoirs plus Big Sandy.

The Glades is a quarter-mile-wide stream flowing constantly through trees and ten-foot-tall grasses at a depth of one to three feet. It is a miniature of the Florida Everglades. At times, it merges with Big Sandy Creek. They cannot construct a dike between the two and leave the Glades performing its natural function.

The Bureau of Reclamation would have more credibility if it would acknowledge that the Army Corps had already found the Big Sandy project to be unfeasible from a water supply aspect as well as for flood control. Instead BOR keeps justifying its study as if the Army Corps had studied something different, which is not true.

The truth is that Big Sandy, upper or lower, is not needed for water supply. Attached is Summary of Big Sandy Dam Issue which further establishes this truth.

For the foregoing reasons, Texas Committee on Natural Resources opposes any further expenditures for study of Big Sandy Reservoir.

SUMMARY OF BIG SANDY DAM ISSUE

In 1983, the Bureau of Reclamation (BuRec) in the Department of Interior obtained Congressional funding for a study of Big Sandy Creek, in the Sabine River basin, to determine water supply needs in the area, and, if any, to develop a plan to meet those needs.

In a Preliminary Draft dated October, 1984, BuRec selected as its preferred alternative a dam on Big Sandy Creek 1½ miles downstream of the Wood-Upshur County line.

In 1982, the Army Corps of Engineers finished a study of Big Sandy Lake Project a short distance upstream, and found that the project was not necessary for water supply and was not as economical as alternative projects on other streams saying:

> "...analysis of water supply needs for the area revealed that water supply needs can be more economically met from other existing and future developable sources. (That) in light of the lack of development and associated needs in the area, advance engineering studies on the Big Sandy Lake Project are terminated until such time that the project has more positive support from potential flood control needs. Water supply needs are not an overriding factor in the decision to continue this project."

This termination followed on the heels of the Corps Summary Report on the Sabine River and Tributaries in February of 1981 which reported:

> "In the Sabine River Basin, relatively high rainfall coupled with sparse population assures a sufficient supply of water for in-basin needs over the foreseeable future."

The Army Corps study also found that a reservoir was not feasible for flood control purposes. BuRec tries to distinguish the Corps study on that basis, failing to recognize that the Corps also dealt with the water supply issue.

BuRec's Big Sandy Creek (lower site) would have a yield of 48,400 acre-feet per year above an earth dam 2,050 long with a maximum height of 45 feet. It would require acquisition of 7,950 acres, mostly good hardwood bottomland, but partly agricultural land and houses (18). Construction cost estimate was $54 million. Average annual cost estimate was $5,586,000. Benefit/cost ration estimate was 1.3 to 1.

The October, 1984, draft reports water supply needs in the Upper Sabine River Basin at 359,400 to 425,400 acre-feet per year in 2030, but only 125,000 acre-feet per year in 1980, with 156,400 already available from existing reservoirs. This is about 140 million gallons per day (mgd).

Actually, from existing reservoirs and those under construction, far more water is available. One reservoir, alone, Toledo Bend, has 848 mgd, of which only 1 mgd is being used. (See attachments)

The draft refers to "future water-use projections", but never gives a break-down of these, nor distinguishes them from contrary Army Corps projections.

The draft admits that the dam would inundate "several miles" of Big Sandy Creek and thousands of acres of bottomland hardwood forests and other wetlands. Big Sandy Creek is one of the few remaining free-flowing streams in East Texas, and the forests on both sides are prime examples of a rapidly dwindling ecosystem, comprising quality wildlife habitat.

The draft states, "A total of about 5,600 acres would be established for environmental mitigation." This would be in other natural areas. It would not create any new natural areas to take the place of those which would be destroyed, but it would theoretically prevent the 5,600 acres from being developed.

The draft states cryptically:

"The preferred alternative would not increase the frequency of inundation of the 'floating glade' marsh, but additional, hydrological studies are required."

The exact import of this language is not clear, but it would appear that The Glades, a significant ecological area near the northern end of the proposed lake site, may be affected in some way by the project.

The draft states, "There has been no local opposition to the preferred alternative" although TCONR and others had made known their opposition. Local landowners say that they are opposed, and that none of the 18 who would have to be relocated is in favor of the dam.

For ecological and economic reasons, TCONR continues to oppose a Big Sandy Lake, regardless of where situated, and requests that all funding be stopped immediately.

See attachments.

1. Map and Tables 13, 14, and 15 from Army Corps of Engineers Supplemental Environmental Impact Statement re Cooper Lake, Texas. (Note: "Distance too far" applies to Dallas and Plano. "No surplus" does not recognize water which is available for re-sale.)

2. Special Values of Free-Flowing Streams.

Free-Flowing Rivers and Streams Have Special Values:

1. Recreation: They provide a diversity of recreational opportunities, different from lakes:

   Different fishing
   Different swimming and wading (children)
   Different hiking
   Different nature study
   Different photography
   Different inspiration

2. Water Quality: They cleanse the water:
   Oxygenation and purification; dams actually deoxygenate and stagnate
   Filtering and purification of certain bacteria
   Reduction of turbidity; waters in reservoirs sometimes wash into unstable banks and increase turbidity
   Maintenance of temperatures; releases from dams change the temperature

3. Ecosystems: They are the sole habitat for many life forms and communities
   They are essential to nutritional enrichment of river bottom forests
   They are essential to the refreshment and enrichment of our estuaries, with their finfish, shellfish, and other life

4. Wildlife: They are one of the principle remaining corridors for animals and their habitats

5. Floodplain Management: They are the original natural system for accommodating floods

6. Archaeological, historical and cultural: They are often an integral factor in the physical manifestations of human activity, ancient to recent, and in current festivals and programs

TABLE 13

POTENTIAL SURFACE SOURCES -- SULPHUR RIVER WATERSHED

Reservoir	Local Sponsor	Yield (mgd)	Current Usage (mgd)	Additional Future Usage (mgd)	Surplus (mgd)	Distance (mi) To NTMWD & Irving	Distance (mi) To SRMWD	Major Reason for Elimination from Study	Remarks
Reservoir at Honey Creek*	--	12.8	0	-	0	14	20	No available yield, no advantage over Cooper	Proposed reservoir
Reservoir on North Sulphur River*	--	- 1/	0	-	-	26	14	No available yield, no advantage over Cooper	Proposed reservoir
Sulphur Bluff*	--	235	0	0	0	53	7	No available yield, no advantage over Cooper	Proposed reservoir
Sulphur Springs	Sulphur Springs Water District	7.1	3.6	3.5	0	47	10	No surplus	Yield will decline and need increase
River Crest	Texas Power & Light Company	0 2/	0	0	0	80	38	No available yield	Cooling reservoir
Naples*	--	740	0	-	0	82	39	No available yield, no advantage over Cooper	Proposed reservoir
Wright Patman	Texarkana	17.9	17.9	0	0	122	79	No surplus	

1/ Small based on similar drainage area
2/ Cooling only
* Proposed

STATEMENT OF BIG THICKET CONSERVATION ASSOCIATION, TEXAS

ROCKLAND DAM: ENVIRONMENTAL DISASTER, COSTLY BOONDOGGLE

Mr. Chairman and committee members:

The Big Thicket Conservation Association (BTCA) welcomes this opportunity to express our deep concern and opposition to the proposed FY86 start up funding for the Rockland Dam Project (COE) in East Texas. This proposed project is located 50 miles upstream from the Big Thicket National Preserve's Neches River Units, and its construction poses a direct threat to the unique biological resources of the Big Thicket National Preserve, a unit of the National Park System. The BTCA and other state and national conservation organizations urge the Corps of Engineers (COE) and the Congress to deauthorize this costly, unnecessary and environmentally destructive water development project.

BIG THICKET NATIONAL PRESERVE: AN INTERNATIONALLY SIGNIFICANT NATURAL RESOURCE

The Big Thicket National Preserve was established by the Congress in 1974 in order to permanently preserve 84,550 acres of the unique, biologically diverse Big Thicket area of southeast Texas in its natural state. The primary reason the Preserve was established as a part of the National Park System was to protect samples of the areas varied plant associations which include southeastern swamp, eastern forest, central plain and southwestern desert species. Leading scientific authorities assert the Big Thicket National Preserve contains more biological diversity than any other area of a similar size in the world. Protected within the preserve are over 1000 varieties of flowering plants, over 100 species of trees including some national and state champions, and 200 species of understory trees and shrubs. In 1981 the Big Thicket National Preserves' unique ecological values were recognized by UNESCO's designation of the Preserve as one of only a few man and the biosphere international reserves located in the United States.

The federal government has spent millions of taxpayer's dollars in order to permanently protect this valuable scientific, recreational, and scenic resource. Since 1974 over $90,000,000 has been expended in order to acquire 80,000 acres of the preserves' authorized 86,000 acres. It is estimated another $9 million is needed in future appropriations in order to complete land acquisition. The National Park Services' annual operating budget for the management and protection of the Preserve is $1,028,000.

Rockland Dam is projected to cost in excess of $650,000,000 to construct. If constructed, the project will suppress flooding patterns within the lower Neches River floodplain, 86 miles (21,250 acres) of which are protected as part of the Big Thicket National Preserve. The result of this reduced annual flooding within the Preserve, will be the drying up of portions of the bottom lands along the river and alteration of the ecological diversity for which these areas were acquired. It makes little sense for the

federal government to expend millions of dollars to acquire and preserve a unique natural area and then a few years later begin to appropriate large amounts of funding for a water development project upstream which will damage and alter the Preserves' unique resources.

ROCKLAND PROJECT HISTORY

The Rockland Dam project was initially authorized by Congress in 1945, long before the establishment of the Big Thicket National Preserve. A COE report in 1947 recommended Rockland be deferred and in 1954 the project was classified as inactive due to insufficient demand for its primary purposes of water supply and flood control. In 1980, at the request of the Lower Neches Valley Authority, the COE initiated a review of the project. In May 1982 the Fort Worth office of the COE issued a report outlining the project's cost, and benefit analysis and recommending the project be activated. The COE recently activated the project based on this May 1982 study and requested $500,000 in start-up funding in FY84 and FY85. However, not until this year, has $250,000 of the COE's requested funds been included in the Administration's proposed budget. A review of the May 1982 COE study reveals many questionable assumptions regarding both the benefits and the costs, economic as well as environmental, associated with the project. The BTCA believes the information gathered in the May 1982 COE study is sufficient to defer further consideration of the project. The BTCA opposes any additional federal expenditures for continued study of the project and urges its deauthorization.

In addition to the project's adverse impact on the BTNP, Rockland would have other serious adverse environmental impacts. A federally protected national forest wilderness area would be denied cyclical overflow damaging plant diversity, wildlife habitat and scenic values. The reduction of instream flows would also damage the economically valuable Neches-Sabine estuaries. Within the project area the Rockland Dam would flood 126,000 acres of currently productive land now utilized for timber production, grazing, farming and homesteading. The area to be inundated by the proposed lake includes several oil exploration sites and potential lignite deposits. The stone works and caves at Fort Teran, a colonial Spanish outpost of historical significance, would be flooded. If Rockland Dam is constructed, Texans will lose another (the longest and best) section of free flowing East Texas River, which currently provides recreation in the form of canoeing, hunting, fishing and increasingly rare wildlife habitat.

Against all of these "costs" of the Rockland project, the COE cites several potential minor benefits and one major benefit. Among the minor benefits are: flood control in a rural area which includes lumber producing lands, national forest and the Big Thicket National Preserves' Neches River Units; a small amount of hydroelectric power production, which is unsignificant when considered against the amount of energy and capital costs required to construct the project; and "lake recreation" which would

duplicate opportunities available 25 miles away on Texas' second largest lake, Sam Rayburn.

In addition to these minor benefits which seem questionable in view of the project's economic and environmental costs, there is one major justification cited by the COE for the project. This is to provide future water supply for the City of Houston after the year 2010. According to the 1985 Texas Water Plan, there are other existing and future potential water supply sources which could meet Houston's future water needs. Several existing East Texas reservoirs are currently greatly under utilized for water supply. In addition, the implementation of meaningful state and local water conservation planning programs and policies could significantly reduce Houston's future water needs.

NECHES RIVER CONSERVATION

Since 1984 the BTCA has worked with other state and national conservation organizations and agencies to promote the preservation of the 208 mile Upper Neches River floodplain corridor. A recent U.S. Fish and Wildlife study of East Texas' bottomland wildlife habitat areas ranks the Upper Neches highly. In an earlier State Parks and Wildlife study, the "1974 Texas Waterways Report", ranked the Upper Neches as one of the best recreational and scenic rivers in the state. The BTCA is currently seeking to encourage public and private sector cooperative planning in order to promote voluntary land owner conservation easements along the Upper Neches.

The 1985 Texas Outdoor Recreation Plan of the State Parks and Wildlife Department calls for establishment of a Texas Natural Rivers System. The entire 208 miles of the Upper Neches is included in the National Rivers Inventory and would be ideally suited for inclusion in the future state rivers program.

ADDITIONAL SUBMITTED STATEMENTS FOR THE RECORD

Senator STENNIS. Because of the hearing schedule, Senator Hatfield wanted to include as many of the statements submitted to the committee as possible. We have expressions on Oregon and Washington projects, from California water and navigation projects, and various statements on energy matters. Based on the desire of the subcommittee chairman, those statements will go into the record.

[The statements follow:]

OREGON WATER RESOURCE DEVELOPMENT PROJECTS

ELK CREEK LAKE

STATEMENT OF ROGUE BASIN FLOOD CONTROL & WATER RESOURCES ASSOCIATION

Once again we are grateful for the opportunity to discuss continued funding for the completion of the last phase of the Rogue River Project in southern Oregon. We are especially pleased that our delegation this year includes representation from the Jackson County Court in the person of Commissioner Stewart McCollom.

As you will recall, this project was authorized by the Congress in 1962 after seven years of organizational effort to address the results of devastating floods in 1955. The first two phases of the project, Lost Creek Dam, dedicated in 1977, and Applegate Dam, dedicated in 1981 have operated with great success since their completion. For example, the town of Phoenix, facing complete water system failure, was able to negotiate a contract for a new water supply from Lost Creek. Farmers along the Applegate River have purchased irrigation water, previously unavailable to them. Sufficient power currently is being generated by the project to provide for 20,000 households or roughly a third of our area's population. Fish runs of Coho salmon, winter steelhead, and fall Chinook have increased and regulated river flows have permitted the number of float trips on the river to double in less than a ten-year period.

Currently the Elk Creek phase of the project is underway with the first or upper road relocation contract work in progress. The second contract for the middleroad section is due for bid opening in about two weeks. In order to take advantage of what appears to be a very favorable construction climate and to save construction costs, it is hoped that the Corps will receive your authority to use the moneys remaining from the ten million dollars allocated for this fiscal year to begin work on the main dam. (The first contract was significantly under estimate and the second one is anticipated to be low as well.) Given the necessary Congressional authority and assurance of continued funding, work on the main dam could begin almost immediately.

Our request of the Committee for fiscal year 1986 is $18,000,000, the amount indicated as the Corps' full capability in correspondence between their personnel and Congressman Smith and Senator Hatfield.

That request is submitted with the concurrence of the 85 member organizations in the Rogue Basin Association as well as local governments, including cities, in both affected counties, Jackson and Josephine Counties, the state of Oregon and our Congressional delegation.

Lest you find this report too upbeat to believe, let us assure you that again this year, as in nearly every year since the early seventies, there emerges--sometime between our Annual Meeting in mid-March and our appearance here in Washington--a group who opposes the Elk Creek Dam. This year it is a group of fishermen and river guides.

Because this entire project was planned as multi-purpose (including flood control, irrigation, power, generation, etc.) and was the first in the nation to include a plan for fish loss mitigation, we are not overly concerned with this year's voice of opposition but felt that you should be aware of the possibility of negative input from them. For the record, the state of Oregon, Department of Fish and Wildlife continues to support Elk Creek Dam.

Several exhibits are attached for your further information about the Rogue Basin project and we shall be happy to respond to questions as well.

STATE OF OREGON
DEPARTMENT OF FISH AND WILDLIFE

3140 N. E. Stephens Street
Roseburg, Oregon 97470

GOLD RAY DAM COUNTING STATION - - - ROGUE RIVER

Fish Counts through December 31, 1982

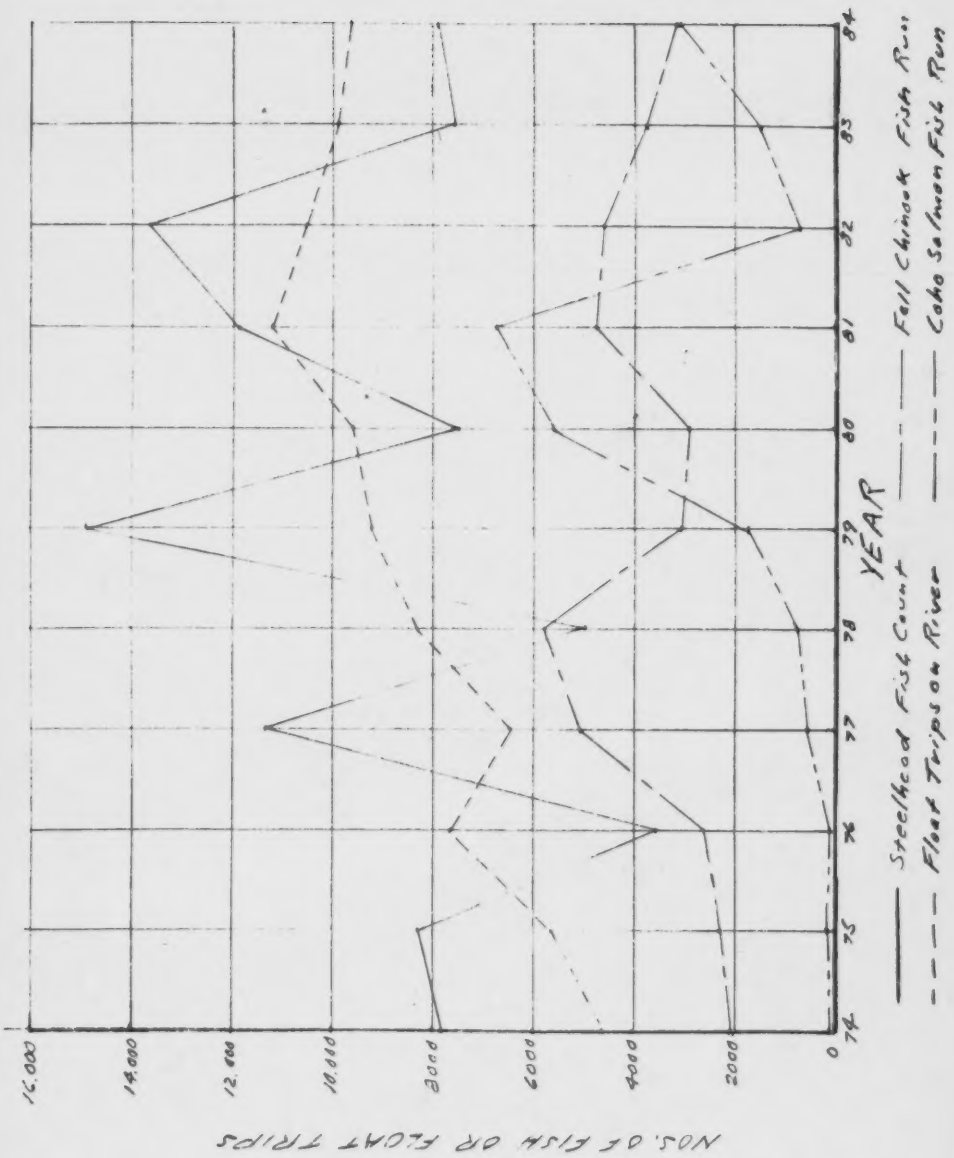
Year	Period of Dec. 16-31	Total through Dec. 31	Total count	Percent of run by Dec. 31
	SUMMER STEELHEAD			
1974	495	7,858	7,858	100.0
1975	1,456	8,338	8,338	100.0
1976	0	3,529	3,529	100.0
1977	1,588	11,352	11,352	100.0
1978	260	4,977	4,977	100.0
1979	380	14,867	14,867	100.0
1980	1,514	7,484	7,484	100.0
1981	2	11,929	11,929	100.0
1982	154	13,654	13,654	100.0
1983	20	7,581	7,581	100.0
1984	495	7858	7858	1000
	COHO SALMON	* Jack Count =	748	
1974-75	0	146	146	100.0
1975-76	6	154	154	100.0
1976-77	0	44	44	100.0
1977-78	0	522	522	100.0
1978-79	41	751	756	99.3
1979-80	0	1,744	1,744	100.0
1980-81	415	5,617	5,617	100.0
1981-82	0	6,725	6,725	100.0
1982-83	0	670	670	100.0
1983-84	0	1,493*	1,493	100.0
1984-85	not counted in December		3,089	Thru 11/30/84
	FALL CHINOOK	* Jack Count =	938	
1974	6	2,065	2,065	100.0
1975	0	2,312	2,312	100.0
1976	0	2,648	2,648	100.0
1977	0	5,081	5,081	100.0
1978	0	5,777	5,777	100.0
1979	0	3,093	3,093	100.0
1980	0	2,903	2,903	100.0
1981	0	4,767	4,767	100.0
1982	0	4,595	4,595	100.0
1983	8	3,839	3,839	100.0
1984	0	3,184	3,184	100.0

March 20, 1985

Bureau of Land Management annual report of float trips down the Rogue River from Memorial day through Labor day. The trips are through the scenic and wild river section .

ROGUE RIVER ACTUAL USE

YEAR	NONCOMMERCIAL	COMMERCIAL	TOTAL
1973	1002	3340	4342
1974	1736	2908	4644
1975	2520	3091	5611
1976	3854	3814	7668
1977	3197	3278	6475
1978	3889	4414	8303
1979	4646	4565	9211
1980	4931	4640	9571
1981	5919	5255	11174
1982	5941	4593	10534
1983	5778	4110	9888
1984	5664	3937	9601


NOS. OF FISH OR FLOAT TRIPS
16,000
14,000
12,000
10,000
8000
6000
4000
2000
0
74
75
76
77
78
79
80
81
82
83
84
YEAR
Steelhead Fish Count
Fall Chinook Fish Run
Float Trips on River
Coho Salmon Fish Run

OREGON COASTAL PORTS

STATEMENT OF PORT OF NEHALEM, OREG.

My name is Stanley A. Jud. I am Secretary of the Port of Nehalem, Tillamook County Oregon. I am accompanied here by Port Commissioner, F.D. (Shang) Knight.

We are here to support the Corps of Engineers' fiscal 1986 budget request of $4,850,000 for funding Section 107 - Small Projects Not Requiring Specific Legislation.

We are having a problem with a Corps' 107 project on the Nehalem River.

The Corps initiated a 107 study on March 31, 1983, about 5 months prior to its completion of a 12-million-dollar jetty restoration at the river mouth.

The Corps' 107 study stalled in the fall of 1983 because of a concern expressed by the Port about the proposed depth of the river channel.

There is a natural channel that extends from the entrance upriver for over 7 miles that is well over the authorized 8-foot entrance channel - except for one shoal located between rivermile 3 and 4. The Corps proposed a 4-foot river channel only in its report on the progress of the 107 reconniassance study. The 4-foot river channel restricts most of the river upstream from the shoal except for very small boats, thereby eliminating the major benefits that could be realized from the new 12-million-dollar jetty system.

The continuation of the Corps' 107 study is estimated to cost $350,000 and will require approximately 24 months to complete from the time the study is resumed.

The Port of Nehalem is caught in a "chicken or egg" situation.

We have an 12-million-dollar investment ready to be used, and the Corps is proposing a 4-foot channel in a naturally deeper river. We have a bonafide multimillion dollar marine development project depending on the use of the river if the 8-foot channel is assured. The marina development will provide a sizeable number of new and permanent jobs in an economically distressed area.

The Port's principal interest has been, and is, to ensure full utilization of the 12-million-dollar federal investment already made in the Nehalem River navigation project, and in the earliest possible completion of the Corps' 107 study of the river channel. It is for this reason we support your continued funding of 107 projects. Thank you.

STATEMENT OF PORT OF SIUSLAW, OREG.

My name is Wilbur Ternyik. I am Secretary of the Port of Siuslaw, Oregon. I am accompanied here today by our Port President, Mr. Stuart Johnson.

We are here to support the Corps of Engineers' fiscal 1986 budget requests now before you for $4,275,000 to complete construction of the Siuslaw River Jetty Extension Project, and for $536,000 for Operation and Maintenance.

While we are here to support these Corps' budget requests, our principal purpose in being here is to say, "Thank you," for your continued interest and support of the funding that has made construction of the Siuslaw River jetty extensions possible.

The ground breaking ceremony on this 25¼-million-dollar construction project ($25,260,220) was held on July 3rd, 1984. The project is now 69% complete and completion is scheduled for this fall -- one year ahead of schedule.

To follow up on the use of this new improvement, our port commission is now in the process of seeking land for a major marine industrial park and proposing a new boat basin development at the river mouth.

These improvements would not be possible without the jetty extensions now being completed.

Again, we say, "Thank you," for the help you have given us.

STATEMENT OF CURRY COUNTY, OREG.

My name is Rocky McVay. I am a member of the Board of Commissioners of Curry County, Oregon.

I am here to present the Board's support of Operations and Maintenance funds included in the Corps of Engineers' budget request for the following three navigation projects located in Curry County:

Chetco River	$602,000
Port of Port Orford	218,000
Rogue River	490,000

We also propose that your Committee favorably consider adding the Corps of Engineers' capability of $90,000 to the budget to resume a General Investigation study of the Rogue River project that has been underway, off and on, for the past 19 years.

We have serious sand shoaling problems and high cost annual maintenance dredging requirements at all three of the coastal ports in Curry County and the Corps of Engineers has recognized these problems.

The uneven jetties at the mouth of the Chetco River contribute to the shoaling of the entrance channel. The south jetty is 500 feet shorter than the north jetty, and the ocean waves carry sand around the short south jetty into the entrance channel. The Corps has recommended, and Congress has authorized, a jetty extension project to even up the jetty system at the mouth of the Chetco River.

The single hook breakwater at Port Orford has caused a sand trap and a resulting critical sand infill of the once naturally-deep harbor. The Corps of Engineers' present dragline dredging of this commercial boat harbor is not providing an effective long-term solution to this shoaling problem.

Following a hydraulic model investigation at the Waterways Experiment Station the Corps' conclusion on Port Orford is that "a second breakwater appears to be the structural alternative offering the greatest likilihood of alleviating shoaling problems."

The improperly aligned Rogue River entrance jetties have contributed to a massive sand infill at the harbor at Gold Beach, which has caused the loss of its once thriving barge operating service and the loss of a sizeable commercial fishing fleet, as well as the closure of fish processing operations in the harbor.

The Corps' Hydrographic model study of the Rogue River project recognizes that the jetties and enclosing breakwater have not served the purpose for which they were authorized and constructed.

The Corps completed a 3-pile experimental dike in the Rogue River entrance in 1984 to try to alleviate the massive sand shoaling now choking the harbor. This experimental pile dike system does not appear to be protecting the inner harbor.

Corrective jetty or breakwater structures are needed at all Curry County ports to reduce, or eliminate, increasing annual maintenance dredging costs.

The ports in Curry County are one of the mainstays of the county's economy and their viability is critical to the future of the county's economic base.

As a result of the depression in Oregon's timber-based economy and coastal commercial fishing industry, the unemployment in Curry County in January, 1985, was at 20.3%, compared to state and national figures of 10% and 8% respectively.

We in the County are concerned about the Administration's Bill introduced as S.534 requiring the sponsor of a river and harbor project to bear 70% of the cost of annual operation and maintenance of existing navigation projects, and 70% of any new work projects.

The Administration's proposed local cost sharing requirements, if enacted by Congress, would legislate the three Curry County ports out of business.

We ask your continued support in appropriating sufficient funds for operation and maintenance necessary to keep the Curry County ports viable, and that you oppose any local cost sharing requirements that would close down the small ports.

Thank you.

STATEMENT OF PORT OF GOLD BEACH, OREG.

My name is Edwin Hirte. I am President of the Port of Gold Beach, Oregon.

The Port of Gold Beach supports the $490,000 of Operation and Maintenance funding requested in the Corps of Engineers' budget for fiscal 1986.

We ask the Committee to consider adding the Corps Capability of $90,000 to resume its study of the Rogue River navigation project. The Corps' estimated total cost of this authorized navigation study is now $885,000. This general investigation was first funded in fiscal 1966, 19 years ago. There is a pressing need for a definitive answer to the problems of the Rogue River navigation project.

Severe sand shoaling of the Rogue River entrance and boat basin channel has been continuous since construction of the federal project. This shoaling has contributed to the loss of all commercial barge traffic over the waterway and to the demise of a once prosperous commercial fishing industry operating in, and from, the port.

In January, 1984, the Corps of Engineers completed construction of a 3-pile experimental pile dike system between the twin-jettied river entrance to try to stop the infiltration of sand into the harbor. The construction cost of the experimental pile dike system was $361,500.

In spite of the completion of the experimental pile dike, there was a 15-foot high sand shoal on the centerline of the entrance channel to the harbor a year later, January 17, 1985. According to a hydrographic survey of channel depths completed by the Corps, the sand pile was 5.1 feet above the mean lower low water line of the channel that should be 10 feet below the mean lower low water line.

The Corps has acknowledged this sand shoaling problem in its invitation for bids on the construction of the experimental 3-pile dike when it stated:

> "PURPOSE: The proposed timber pile dike is intended to control the upstream migration of a sand bar which has in the past few years annually blocked the entrance to the Boat Basin located south of the navigation channel near River Mile 1. The sand bar also migrates into the Boat Basin requiring the Port of Gold Beach to dredge large volumes of material to maintain adequate depths in the Boat Basin."

The Corps' budgeted funds for fiscal 1986 do not provide for any dredging of the sand that migrates into the harbor beyond the designated channel dimensions.

Since the sand infiltration into the Port's harbor area (outside the federal navigation channel) results, in large part, from the Corps' obvious, and acknowledged, deficiency in design of the river entrance jetty system, we feel the removal of this large volume of sand should be a federal responsibility.

The Corps' fiscal 1986 budget request indicates that proposed legislation is to require a 70% non-federal share of the cost of Operation and Maintenance (O&M) of harbors such as at Gold Beach.

70% of the $490,000 budget request for O&M for the Rogue River projects equals a local cost share of $343,000, an amount that is impossible for the local project to attain in any year.

Since sand shoaling resulting in large part from the design of the Rogue River navigation project has contributed to the demise of the commercial vessel traffic, there is little left on which to assess the local cost sharing as now proposed by the Administration.

The large-scale federal and local investments already made in port facilities at Gold Beach represent one of the principal hopes for economic development in a community where the economic and employment base has been devastated by the ongoing depression in the forest products and commercial fishing industries on the Oregon Coast.

We urge the appropriation of the $495,000 budgeted for the Rogue River, and the addition of the Corps of Engineers' capability of $90,000 to complete the General Investigation of this project.

Thank you.

STATEMENT OF PORT OF UMPQUA, OREG.

The Port of Umpqua supports the $865,000 of Operation and Maintenance (O&M) funding requested by the Corps of Engineers' budget for fiscal 1986. These funds are essentially for dredging.

The Corps of Engineers fiscal 1986 budget request indicates that non-federal cost-sharing is required under an Administration Bill introduced as S.534.

The Administration Bill requires that 70% of the average annual maintenance and operation cost is to be borne by the sponsor of projects greater than 14 feet deep, but with less than one million tons of commercial traffic. 70% of the Umpqua River O&M funding of $865,000 is $605,500.

The authorized project on the Umpqua provides for a 26-foot-deep entrance channel and a 22-foot-deep river channel.

The Corps of Engineers' statistics on tonnage reveal that in 1980 the commercial traffic on the Umpqua River exceeded the one million tons required in the proposed legislation relating to cost-sharing. From 1981 on, the tonnage has dropped significantly due to the recession in the forest products and related industries.

A further reduction in the production of wood products from the area tributary to the Umpqua River could be in the offing unless there is a turnaround in the profitability in that industry.

The addition of user fees to provide for the Administration's proposed 70% local cost-sharing recovery of O&M costs would unquestionably require a surcharge on waterborne tonnage that would place present shippers in a more disadvantageous position than they are now.

In addition to the regularly scheduled annual maintenance dredging of the Umpqua River entrance, there is still the need to shave off a portion of the large middle ground sand shoal in the entrance to facilitate continuation and improvement of the self-scouring action.

Thank you.

STATEMENT OF PORT OF BROOKINGS, OREG.

My name if Russ Myers. I am Chairman of the Brookings Port Commission, the sponsor of the federal navigation project on the Chetco River, Oregon.

The Port of Brookings supports the Corps of Engineers' fiscal 1986 budget request for $602,000 for annual Operation and Maintenance of the Chetco River Navigation Project.

The annual cost of operation and maintenance of the Chetco River project has more than tripled in the last ten years. The increasing high-cost annual dredging requirements results, in large part, from the uneven jetty system at the mouth of the river.

The south jetty is 500 feet shorter than the north jetty. The ocean waves carry sand around the short south jetty which deposits in the entrance channel requiring exesssive maintenance. This sand shoaling of the entrance also contributes to the hazards to navigation.

The Corps of Engineers' hopper dredge, YAQUINA, dredged the entrance channel to its project dimension of 14 feet deep on August 23, 1984. Five months later, a January 23, 1985, hydrographic survey chart by the Corps of Engineers revealed a sand infiltration of 7 feet along the south channel line just seaward of the end of the short south jetty.

In 1976 the Corps of Engineers' feasibility report recommending the jetty extension project indicated that the improvements would provide an annual benefit of $108,000 by reducing annual maintenance dredging. The total budget request for operation and maintenance funding in fiscal 1976 was only $175 000.

According to the Corps of Engineers' January 23, 1985, hydrographic survey, the extension of the south jetty by 500 feet to even it up with the existing north jetty could relieve much of the annual entrance dredging requirements.

The Port of Brookings is seriously concerned about the Corps of Engineers' budget request for fiscal 1986 which indicates that non-federal funds are to be derived from user fees to recover funds for operation and maintenance of river and harbor projects. The decline in waterborne forest products tonnage over the Chetco River waterway, and the decline in the commercial fishing industry, has already caused serious economic problems to the port and community to say nothing of the problem that port user fees would cause.

We urge the appropriation of the Corps of Engineers' budget request of $605,000 for operation and maintenance dredging of the Chetco River navigation project in fiscal 1986. Thank you.

UMATILLA BASIN PROJECT

STATEMENT OF CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION

Request:

The Confederated Tribes of the Umatilla Indian Reservation request that Congress increase the FY 1986 Bureau of Reclamation budget by $150,000 - $200,000, specifically for the advance project planning phase of the Umatilla Basin Project, Oregon.

Explanation:

The Confederated Tribes of the Umatilla Indian Reservation understand that the total Bureau of Reclamation budget request for FY 1986 for the Umatilla Basin Project, Oregon, is $125,000. The Confederated Tribes support this budget request as the amount necessary to achieve a timely completion of the initial planning phase and investigation of the feasibility of the Umatilla Basin Project. However, the Confederated Tribes object to the ommission from the FY 1986 Bureau of Reclamation budget of a funding request necessary to begin the second phase or advanced project planning phase of the Umatilla Basin Project simultaneously with the completion of the initial planning phase and investigation. The Tribal staff estimates that the Bureau of Reclamation could spend from $150,000 - $200,000 in FY 1986 on detailed field investigations and data collection which is typical of advanced planning on a project like the Umatilla Basin Project, Oregon. Appropriation of this amount is necessary to allow the project to progress to the point of authorization in a timely manner.

Failure by the Administration to seek funding in FY 1986 to begin the second phase or advanced project planning phase of the Umatilla Basin Project virtually assures that the Umatilla Basin Project will be shelved indefinitely. This prospect is dismaying to the Tribe because the Umatilla Basin Project was conceived by the Tribe and local interests in the Umatilla Basin Project as a cooperative means of solving water conflicts in the basin in a neighborly manner. The cooperative efforts of the Tribe, the Oregon Department of Fish and Wildlife, and several irrigation districts to bring the Umatilla Basin Project to fruition have attracted severl million dollars in fish enhancement funding from sources such as the Northwest Power Planning Act Fish and Wildlife Program. Successful completion of the project would maximize the benefits of the on-going fish restoration and enhancement effort in the basin. These efforts and results are significant because the cooperating entities historically have been on opposite sides of the fence on fish and water issues.

The Umatilla Basin Project is important to the Confederated Tribes and the local non-Indian community for the following reasons, successful completion of all phases of the Umatilla Basin Project would:

(1) Provide stability to the existing delivery of irrigation water to the non-Indian community;

(2) Provide the Confederated Tribes with an adequate quantity and quality of water for instream flows to maintain and enhance the treaty fishery resources;

(3) Provide the Confederated Tribes with an adequate quality and quantity of water for consumptive purposes such as agriculture, industry, and domestic uses; and

(4) Resolve the current water use conflict between the Confederated Tribes and the local non-Indian water users in a cooperative manner without the time and expense of lengthy and hostile litigation.

Since the early 1900's the Bureau of Reclamation has developed and encouraged major non-Indian irrigation projects in the Umatilla Basin. In approximately 1920, the Bureau of Reclamation pre-empted the best reservoir site in the basin (this site also happens to be on the Umatilla Indian Reservation) to construct and provide storage for irrigation water for non-Indians off-reservation. This reservoir stores water which arises and flows through the Umatilla Indian Reservation.

For the last eight years the Confederated Tribes and other local interests have participated in the study of the Umatilla Basin Project with the Bureau of Reclamation to resolve short of litigation the water use conflicts caused by the presence of the Bureau of Reclamation in the Umatilla Basin. Failure to appropriate advanced project planning funds in FY 1986 will jeopardize the progress made to date in the longterm resolution of the water use conflicts in the Umatilla Basin.

Statement of Oregon Water Resources Department

The Oregon Water Policy Review Board supports the continuation of the Bureau of Reclamation's Umatilla Basin Project. This investigation has brought together diverse interests in the search for a solution of basin problems.

The Umatilla River is essential to extensive agricultural production in eastern Oregon. Natural shortages of surface water, however, have been a limiting factor since the turn of the century and ground water supplies are not adequate to maintain agricultural production. Anadromous fish runs throughout the Columbia Basin have been dramatically impacted reflecting the effects of hydroelectric projects, depletion of streamflow and natural low-flow conditions.

The Bureau of Reclamation, Confederated Tribes of the Umatilla Reservation and the local advisory committee, with the assistance of other federal and state agencies, have worked hard to find a method of meeting present irrigation needs and realizing the fishery potential. The state is funding support of local participation in the Bureau planning process. A major effort in fisheries enhancement is already underway through the Columbia River Basin Fish and Wildlife Program of the Northwest Power Planning Council with funding through the Bonneville Power Administration. Those expenditures alone will not achieve the full fishery potential of the basin until the instream flow problems are also resolved.

The restoration of fish runs and reliable summer flows in the Umatilla River will benefit the local area, the tribes and the State of Oregon. If the project produces potential for expanding irrigated acreage, or conserving irrigation supplies, it could provide additional benefit to the economy. There are few options for water development at the local level with the potential to serve both instream and out-of-stream needs.

The Water Policy Review Board urges the House Appropriations Subcommittee on Water and Power Resources to fund the continuation of this important effort so project authorization and appropriation proposal can be placed before Congress in the near future.

OPPOSITION—ELK CREEK LAKE, OREG.

STATEMENT OF FREDRIC L. FLEETWOOD, TRAIL, OREG.

Please make this and the enclosed letter part of the records of the forthcoming hearings. Elk Creek Dam is the third and last remaining dam to be built as part of the Rogue Basin Project in southern Oregon. The other two, Lost Cr. and Applegate Dams, are built and operating.

For at least the past 13 years, and maybe longer, Elk Cr. Dam has been marked by bitter opposition and controversy. Ten years ago, the State of Oregon offically withdrew its support, and construction related to the dam stopped. Since then a new Governor was elected and new boards were appointed by the Governor, but the controversy still continues. Even as recently as Feb. 1984, the Secretary of the Army requested the Corps of Engineers to review and test the dam's economic feasibility again, only this time in light of current conditions. The result of that review showed that, even by the Corps' own admission, the dam was "a loser." The dam was essentially dead at that point, but as you know it is not until deauthorization occurs. Only by the irrational insistence and pushing of Senator Hatfield, has the ghost survived and continued.

The enclosed letter succinctly states why Elk Cr. Dam should NOT have further funding. In fact it demonstrates why the dam should be deauthorizeed. Most of the reasons are contained in the 1982 GAO Report on the Dam. Other issues are relatively new (new fisheries information), or they are older ones that still make the dam unacceptable.

This Elk Creek Dam is one project that should not be funded now since we are desparately trying to reduce the Federal deficit. Nor should it be funded any longer -- ever -- because of its waste and its detrimental effects. It should be expunged from the law.

Fredric L. Fleetwood
4261 Hwy. 227
Trail, Oregon 97541

March, 15 1985

Jackson County Commissioners
Jackson County Courthouse
Medford, Oregon 97501

Dear, Hank, Jerry, and Stewart:

The M.M.T. recently stated you will testify in support of Elk Cr. Dam. At a time when we are desperately trying to cut our $200 billion Federal deficit, why do you want to support a project that would only return 26¢ in benefits for every dollar spent? The 26¢ return is computed on the absurd 3½% interest rate. The dam would have:

1. No irrigation benefits

2. No Power benefits (as currently designed)

3. No Water Quality benefits

4. No Water Supply benefits (all anticipated future needs are met by Lost Creek)

5. Negligible recreation, area redevelopment, and flood control benefits.

Also, it would have detrimental effects on wildlife and the Rogue River fisheries. Lost Creek Dam would have to try to compensate for Elk Creek's detriments.

And if all that wouldn't be enough, the dam is apparently illegal because:

1. The Flood Control Act of 1936 states that Federal flood control projects should exceed cost. Elk Creek does not.

2. Releases would violate water quality standard promulgated in accord with the Clean Water Act of 1977.

3. Releases during the irrigation season from Elk Creek into the Rogue River is contrary to the authorizing document, HD 566, 87th.

Sincerely yours,

Fredric L Fleetwood

Fredric L. Fleetwood

STATEMENT OF DAVE WILLIS, ASHLAND, OREG.

I oppose the Elk Creek Dam. I wish you did, and don't understand why you don't.

Why spend millions of dollars to further reduce and endanger our natural fisheries? Especially why spend that kind of money for power needs that do not exist? Expecially when what the Rogue Valley needs is not more power but more conservation and sensitivity to its land community. Real power enhances the earth—it doesn't endanger it.

Too much money has been spent already on the project. Please don't waste more. I'd like to see a copy of the GAO study (CED-82-52) that shows only 27c benefit for every dollar spent on the Elk Creek Dam. Please send me the study unless you'll be damning the dam, in which case you can save the government the money and me the expense of time in dealing in those numbers.

STATEMENT OF NANCY BEAMER, OREGON

I am writing to ask that you reconsider your support of the proposed Elk Creek Dam in the Rogue basin of southern Oregon. I would like for this statement to be included in the official hearing record on this proposed project.

In the GAO's own study, the cost/benefit ratio of this project was shown to be flagrantly negative. If the Republican leadership in the Senate is to truly lead, here is a place to start working on the budget deficit.

Moreover, the danger this project poses to the sport fishing on the Rogue more than outweighs any specious benefit supposedly provided by the project. Since moving to Oregon 18 years ago, I have sadly watched many scenic and recreational opportunities go down the drain. I write letters and go to meetings, but my impression is that the average person has a negligible influence in these matters—money talks and money gets what it wants. No wonder voters are accused of being apathetic—after a while a person just gets tired of beating her head against a brick wall.

I hope enough individuals write to indicate to you that there is a sound basis—fiscal and environmental—to justify killing this project.

STATEMENT OF PATRICIA LOVELAND, CORVALLIS, OREG.

I am writing to express my opposition to the Elk Creek Dam in the Rogue Basin. Please add this letter to the Hearing records.

Economic studies show that the benifit/cost ratio is very low, and in fact the dam is not needed for flood control, water supplies & irrigation, or recreation. Moreover, the dam would have extremely harmful effects on the salmon runs and downstream fish habitat. At a time when natural fish runs are fighting for survival, it makes no sense whatsoever to continue to destroy them. As an angler and Citizen concerned about the environment, I oppose the dam project on environmental grounds alone.

The Congress and the President are currently struggling to minimize Federal spending. In this regard, you have already identified the importance of cutting excessive Military spending. Certainly, worthless and harmful boondoggles such as this dam project should be scrapped as well. As a taxpayer, I will resent that one penney be appropriated for this project. I expect you, as my Senator to oppose the economic and financial irresponsibility the Elk Creek dam represents.

I urge you to oppose the earmarking of any funds for this project.

STATEMENT OF MARK SWISHER, TALENT, OREG.

I have followed the proposed Elk Creek Dam project in our local paper, and believe you should reconsider your position on this issue. The dam will severely damage the Rogue River water quality by increasing turbidity at all times of the year, it has the possibility of further damaging the Rogue River fish runs by elimination of wild fish spawning areas and by increasing winter water temperatures (which cause fry emergence too soon into the water column before insects are available to feed upon). The Rogue fishery has sustained decades of abuse by both public and private agencies and individuals in the form of poor logging practices, improper stream crossings, poor road placement next to streams, dam construction which has hindered fish passage (such as at Savage Rapids), and siltation from agriculture. This dam will be another fish-killer and should be opposed on that basis alone, since the Rogue fishery brings an estimated $25 million to our region annually.

The dam is a wanton waste of our money, providing us jobs in the short run, but at enormous cost. The cost/benefit ratio is so poor that the Army Corps of Engineers dropped their support on that basis. To a fiscal conservative like yourself, a project such as this in another state would never receive your support, and yet you apparently do support the project here. This seems strange to those of us who respect your ability to separate truly deserving projects from blatantly pork-barrel ones in other areas of our country. Our nation's budget deficits are due in large measure to just this kind of government project at all levels. It would be an economically responsible move on your part to drop support for this project.

I ask that my remarks be included in the official hearings record.

I urge you to drop your support for Elk Creek Dam.

STATEMENT OF JOE AND HELEN PLANETO, AGNESS, OREG.

One more dam will result in total destruction of the once free flowing beauty of Rogue River. According to the Army Corp of Engineer's own data, operation of the dam is expected to increase turbidity below the Elk Creek dam site by 267%.

One more dam will mean the extinction of the famous Rogue River spring Chinook. The Oregon Dept. of Fish and Wildlife has found that warming of the river by the Lost Creek dam during Oct.-Jan. has caused early emergence and reduced survival of spring Chinook fry. ODWF has estimated that just 1° C. river temperature increase in January would decrease survival of spring Chinook fry by 60-80%.

The many fly fisherman who have enjoyed the fall fishing on this section of Rogue River will have no reason to ever return. Water flows in the river will be increased during Sept-Oct if the Elk Creek dam is built. Anglers and guides complain that high flows have washed out many of their favorite riffles and that fly fishing is not worthwhile in most areas because the water is too deep and swift.

We live beside Rogue River and have watched the damage caused by Lost Creek dam. If we double the problem with another dam the once famous Rogue River can be forgotten except as a channel to carry the overflow from a couple of recreational lakes.

We know another recreational lake isn't needed. The reservoirs now available in the same region are underutilized.

The Lost Creek dam isn't needed for flood control, existing dams are more than adequate.

The Lost Creek dam is not needed to provide irrigation water. The other two dams of the Rogue Basin Project utilize only 4.2% of the irrigation water set aside. The Army Corp of Engineers has admitted that Lost Creek dam can meet all the currently anticipated future water supply needs of the Rogue River Basin.

Rogue River salmon are too important to our economy to be exterminated. Our resorts are dependent on the

sports fishing of salmon species. Our fishing guides are dependent on salmon runs. Many of our permanent residents own rentals for seasonal sports fisherman.

Please include this letter in the official hearing record.

Thank you for your attention.

STATEMENT OF SHERRY WELLBORN, PORTLAND, OREG.

This letter is in regards to the proposed Elk Creek Dam. At the outset, I wish to register my opposition to this project and ask that my comments be included in the official hearing record.

If projects which lose money so badly as this one were not initiated it would be harder for the present Administration to cut needed social services like Social Security. I wonder who this dam proposal benefits? It may support some local, short term jobs. Then what? Oregon needs long term jobs, not short term federal welfare.

Especially when that welfare destroys the major attraction Oregon has—its environment. Especially, also, when short term jobs will add more pressure to Oregon's struggling fishing industry. We cannot afford to destroy more salmon habitat, yet the proposed Elk Creek Dam does just that.

This dam will not provide needed water, power, or recreation. It is certain to destroy precious salmon runs and gobble up federal money with no financial return. I urge you to stop the proposed Elk Creek Dam before more money is wasted.

Columbia Basin Project, Washington

Statement of Columbia Basin Development League

This testimony supports the Department of the Interior Program for the Bureau of Reclamation on the Columbia Basin Project in Washington State. Our testimony last year mentioned the completion of the first half of the irrigation system after 50 years of work, the finishing of the third power plant, and the six new pump back generators at Grand Coulee Dam. The decrease in the FY86 Budget from the FY85 Budget reflects the completion of these items. One small but very necessary item was not included in the FY86 Budget however, and that is the Wahatis Wasteway in the Wahluke Branch Canal. This canal serves close to 50,000 acres now and the only wasteway on it has been closed to use because of environmental concerns on the Columbia River. The Wahatis Wasteway would correct those concerns and provide a much needed "safety valve" which would correct a now very difficult operational problem. For this reason we ask that you increase the FY86 budget for the Columbia Basin Project by $1,000,000 so that the necessary design and construction activities can continue.

The Columbia Basin Project's ability to produce over seventy different crops on the irrigated portion gives the farmers the opportunity to diversify and raise nonsurplus crops year after year with reliability. This has created a farming community in Washington State that is not having such a difficult time under adverse economic conditions as are most other farm areas in the nation. This proves the wisdom of starting the Columbia Basin Project 50 years ago and gives us good reason to strongly support total completion of the second half of the Project in a timely manner.

We ask for your support and approval of the budget and the $1,000,000 addition for the Wahatis Wasteway.

Thank You.

Statement of East Columbia Basin Irrigation District, Washington

The East Columbia Basin Irrigation District supports the President's budget for the Columbia Basin Project for fiscal year 1986.

The funds dedicated to drainage construction will allow that program to continue at a modest pace. Installation of additional drainage facilities continues to be necessary as the project matures in order to protect agricultural soils. However, the present need for these facilities is much reduced from what it was in the project's earlier years.

The proposed budget also provides funds for planning activities for completion of the second half of the project. The State of Washington is assisting the Bureau of Reclamation with these studies. The State's recently-completed "Preliminary Socioeconomic Analysis" will become a portion of the Bureau of Reclamation's "Environmental Impact Statement". This planning is necessary now so that the Federal Government, State of Washington and the landowners will be in a position to move ahead with project completion later in this decade.

We do recommend that Congress provide $1 million of construction funds in addition to the President's budget so that the Wahatis Wasteway can be completed. This wasteway is a necessary safety valve for the Wahluke Branch Canal. Much of this wasteway is currently in place and it would be logical to complete the remaining reaches soon. Once completed, the wasteway will provide for the proper regulation of the Wahluke Branch Canal, protect adjoining agricultural and wildlife lands from extensive damage in the event of a canal failure and minimize the possibility of having to route water into the White Bluffs area along the Columbia River, opposite the Hanford Area, in the event of a canal emergency.

Statement of South Columbia Basin Irrigation District, Washington

On behalf of the Board of Directors of the South Columbia Basin Irrigation District, I am pleased to inform you and your committee members that we request that the President's Budget as it relates to energy and irrigation development on the Columbia Basin Project for the Fiscal Year 1986 be increased by an appropriation of funds to continue the timely completion of the Wahatis Wasteway extension adjacent to Irrigation Block 25. We recommend that the President's Budget be increased by $1,000,000 to continue the necessary design and construction activities to permit completion of the referenced Wahatis Wasteway extension in the Fiscal Year 1987 as initially proposed in the sequence of Project development. The completed facility will be a "valued" operational safety valve for the Wahluke Branch Canal system which conveys water to 48,800 acres below the proposed wasteway diversion structure location. The need for the timely completion of Wahatis Wasteway extension is also necessitated by the White Bluffs Wasteway's operating use limitations. The White Bluffs Wasteway headworks is located approximately eight (8) miles upstream from the proposed Wahatis Wasteway diversion structure location.

We particularly support the following Columbia Basin Project irrigation development items budgeted in the President's Budget for Fiscal Year 1986:

A. Drainage Construction
B. Deferred and Supplemental Construction
C. East Low Extension
D. Main Canal Enlargement, and
E. East High Canal Irrigation System.

On behalf of the Board of Directors and the landowners of this District, I thank you for your past cooperation and courtesies and encourage your consideration of the increase in appropriation of funds for the Wahatis Wasteway extension along with the favorable support of the President's Budget. We look forward to the ultimate completion of the 1,029,000-acre Columbia Basin Project as originally authorized and reauthorized by Congress almost fifty years ago.

STATEMENT

OF

SOUTH COLUMBIA BASIN IRRIGATION DISTRICT

Our contract with the United States for the construction of facilities to provide a water supply for approximately 370,000 acres was dated October 9, 1945 and signed by Harold L. Ickes for the United States and by Loen L. Bailie for the South Columbia Basin Irrigation District. The latest amendment to that contract was dated December 18, 1968 and signed by H. T. Nelson for the United States and by Clair W. Hobkirk for the District. That amendment transferred the responsibility of operations and maintenance of Project Facilities to the District.

Today, facilities have been constructed to provide a water supply to approximately 211,500 acres, or 57% of the original contractual acreage in the South Columbia Basin Irrigation District. The District lands lie in the southern portion of the Columbia Basin Project. The present irrigable land total within the Quincy, East, and South Columbia Basin Irrigation Districts is approximately 545,000 acres. Said total represents 49% of the ultimate Project development of 1,095,000 acres. The orderly sequence of development over the past fifty years, which at times has been slowed due to national priorities, has promoted steady growth for the agri-business support communities within the Project boundaries. Individual communities have not fallen prey to the "boom and bust scenario" as a result of declining construction activities. Reclamation, transformation, and/or development - whichever word you prefer - of the dry, semi-arid lands of Southcentral Washington has been beneficial for the state and our nation. In excess of 70 different crops are grown on lands which were previously singular-cropped lands - dryland wheat or pasture - prior to the Project development.

On behalf of the Board of Directors of the South Columbia Basin Irrigation District, I am pleased to inform you and your committee members

that we request the President's Budget, as it relates to energy and irrigation development on the Columbia Basin Project for the Fiscal Year 1986, be increased by an appropriation of funds to continue the timely completion of the Wahatis Wasteway extension adjacent to Irrigation Block 25. The President's Budget only provides for the continuation of preconstruction activities on the said wasteway. We recommend that the President's Budget be increased by $1,000,000 to continue the necessary design and construction activities to permit completion of the referenced Wahatis Wasteway extension in the year 1987 as initially proposed in the sequence of Project development. The completed facility will be a "valued" operational safety valve for the Wahluke Branch Canal system which conveys water to 48,800 acres below the proposed wasteway diversion structure location. The need for the timely completion of Wahatis Wasteway extension is also necessitated by the White Bluffs Wasteway's operating use limitations. The White Bluffs Wasteway headworks is located approximately eight (8) miles upstream from the proposed Wahatis Wasteway diversion structure location.

The President's Fiscal Year 1986 Budget, with the requested increase of funds for the Wahatis Wasteway Extension shown as a direct-line item, is attached to the written testimony for your review. We support the Columbia Basin Project Fiscal Year 1986 Program with the noted request increase. The irrigation facilities program provides for the continuation of preconstruction activities on the following:

A. Deferred and Bypassed Lands

B. East Low Extension

C. East High Canal Irrigation System

D. Main Canal Enlargement, and

E. West Canal Enlargement.

Work on <u>essential</u> drainage and supplemental construction will continue on schedule.

On behalf of the Board of Directors and the landowners of the Project, I thank you for your past cooperation and courtesies, and encourage your

consideration of the increase in appropriation of funds for the Wahatis Wasteway extension along with the favorable support of the President's Budget. We look forward to the ultimate completion of the Columbia Basin Project as originally authorized and reauthorized by Congress almost fifty years ago.

THE PRESIDENT'S FISCAL YEAR 1986 BUDGET

WITH

WAHATIS WASTEWAY EXTENSION REQUEST

DEPARTMENT OF THE INTERIOR PROGRAM

FOR THE

BUREAU OF RECLAMATION

WASHINGTON

Columbia Basin Project

Major Items	FY 1986
Irrigation Facilities	
Drainage Construction	$ 4,000,000
Deferred and Supplemental Construction	1,010,000
Deferred and Bypassed Lands	240,000
East High Canal Irrigation System	635,000
Main Canal Enlargement	50,000
East Low Extension	600,000
Total - Irrigation Facilities	$ 6,535,000
Wahatis Wasteway Extension (Requested Increase)	1,000,000
New Total - Irrigation Facilities	$ 7,535,000
Third Powerplant	
Third Powerplant (Riverbank Stabilization Program and Clean-Up Activities)	$ 10,741,000
Third Powerplant Switchyard (Electrical Modifications)	2,145,000
Visitor Facilities	8,000
Total - Third Power Plant	$ 12,894,000
GRAND TOTAL - COLUMBIA BASIN PROJECT	($ 19,429,000)
NEW GRAND TOTAL WITH WAHATIS WASTEWAY EXTENSION	$ 20,429,000

STATEMENT OF PORT OF GRAYS HARBOR, WASH.

Mr. Chairman and Members of the Committee, my name is Henry E. Soike and I am the General Manager of the Port of Grays Harbor which is Washington States only Deep Water Coastal Port.

Our navigation facilities provide the access link between federal, state, and private timber resources and the Pacific Rim countries of Japan, Korea, and the Peoples Republic of China.

While 1984 was not a particularly good year for the timber industry, we are pleased to report that waterborne shipments from Grays Harbor totaled 3,825,948 tons. This was the second highest volume of forest products exported in the 70-plus year history of our Port.

In 1965 the Corps of Engineers initiated a study to determine the feasibility of increasing the existing 30-foot draft of our navigation channels. On December 14, 1982, the Board of Engineers recommended the project be authorized at 38 feet at an estimated cost of $86,000,000. The Chief of Engineers has now forwarded this feasibility report with a favorable recommendation to the Secretary of the Army.

Our 1984 Annual Report reveals that 72 percent of the vessels departing from Grays Harbor exceeded the current project depth. This was accomplished only by over dredging berth areas and accepting vessel delays and sailing at maximum tide conditions.

We are anxious to see Continuation of Planning and Engineering completed on this project, and we are pleased the budget contains $950,000 to continue this effort. We wish to express our appreciation to the Committee for its past considerations in providing necessary funds for the Grays Harbor Deepening project.

I thank you for the opportunity to submit this Statement for the record.

CALIFORNIA WATER RESOURCE PROJECTS

STATEMENT OF SENATOR PETE WILSON OF CALIFORNIA

MR. CHAIRMAN, IN LIGHT OF THE FACT THAT YOUR SUBCOMMITTEE WAS UNABLE TO HOLD APPROPRIATION HEARINGS FOR THE CALIFORNIA WATER PROJECTS, I APPRECIATE THIS OPPORTUNITY TO SUBMIT MY TESTIMONY.

I UNDERSTAND THE CIRCUMSTANCES THAT LEAD TO THE CANCELLATION OF THE ANNUAL HEARINGS AND I WANT TO BEGIN BY LETTING YOU KNOW THAT YOUR STAFF HAS DONE AN EXCELLENT JOB IN MEETING THE ADDITIONAL NEEDS OF MY CONSTITUENTS AS A RESULT OF THE HEARING CHANGE. MY STAFF AND I APPRECIATE THEIR SKILLS AS WELL AS THEIR PATIENCE.

ADDITIONALLY, I WANT TO CONGRATULATE AND THANK THE CALIFORNIA WATER COMMISSION AND THE CALIFORNIA MARINE AFFAIRS NAVIGATION CONFERENCE FOR THEIR EFFORTS TO MAKE FISCALLY RESPONSIBLE REQUESTS FOR FISCAL YEAR 86. I RELY HEAVILY ON THEIR RECOMMENDATIONS AND BELIEVE THEY DO AN OUTSTANDING JOB OF REPRESENTING THEIR RESPECTIVE CONSTITUENCIES. FOR EXAMPLE, THE CALIFORNIA WATER COMMISSION FUNDING REQUEST FOR FY 86 EXCEEDS THE PRESIDENT'S BUDGET BY ONLY $500,000. MR. CHAIRMAN, WHILE CALIFORNIA HAS EXCEPTIONAL NEEDS ARISING FROM ITS POSITION AS THE NATION'S MOST POPULOUS STATE, CALIFORNIA STATE GOVERNMENT UNDERSTANDS THE NEED FOR DEFICIT-REDUCTION AND REALIZES THAT REDUCTION EFFORTS MUST TOUCH ALL AREAS OF THE BUDGET.

THEREFORE, MR. CHAIRMAN, I AM NOT ADVOCATING AN INCREASE IN FEDERAL SPENDING ABOVE THE PRESIDENT'S BUDGET REQUEST FOR WATER RESOURCE NEEDS IN MY STATE; HOWEVER, I AM ADVOCATING THE NEED FOR NEW APPROACHES TO WATER DEVELOPMENT SO THAT CALIFORNIA'S REAL WATER DEVELOPMENT NEEDS ARE ADDRESSED IN AN ORDERLY AND COMPREHENSIVE MANNER.

I CONTINUE TO TELL MY FELLOW CALIFORNIANS THAT FUTURE INCREASES IN SPENDING ON WATER DEVELOPMENT MUST COME FROM NON-FEDERAL SOURCES, THAT INCREASINGLY THEY WILL BE CALLED UPON TO BEAR A GREATER SHARE AT THE LOCAL LEVEL AND MUST LOOK FOR INNOVATIVE APPROACHES TO MEET THEIR WATER DEVELOPMENT NEEDS.

TO THAT END, MR. CHAIRMAN, I AM HAPPY TO REPORT THAT CALIFORNIA IS IMPLEMENTING INNOVATIVE APPROACHES. THIS IS ILLUSTRATED BY SANTA CRUZ ATTEMPTING TO PURCHASE ITS OWN DREDGE AND ACCEPTING A MUCH GREATER SHARE OF THE RESPONSIBILITY FOR DREDGING ITS HARBOR. ANOTHER EXAMPLE IS THAT OF WEST NEWPORT BEACH HARBOR WHERE LOCAL OFFICIALS ARE TELLING THE ARMY CORPS OF ENGINEERS THAT COSTA MESA HARBOR IS WILLING TO PAY FOR CORPS RECONNAISSANCE STUDIES, IF NEED BE.

MR. CHAIRMAN, I KNOW THAT YOU AND THE OTHER SUBCOMMITTEE MEMBERS ARE WELL AWARE OF THE ACUTE AND DIVERSE WATER NEEDS OF MY STATE -- RANGING FROM DEVELOPMENT OF MUNICIPAL AND INDUSTRIAL WATER SUPPLIES, TO WATER CONSERVATION, TO IRRIGATION OF AGRICULTURAL LANDS AND PROVIDING HYDROELECTRIC POWER, TO RECREATION, AND FISH AND WILDLIFE MANAGEMENT -- AND THE IMPORTANCE OF ADDRESSING THESE NEEDS IN A STRUCTURED AND TIMELY MANNER.

TWO YEARS AGO THE NEED FOR EFFICIENT FLOOD CONTROL AND PREVENTIVE EROSION MEASURES WAS HIGHLIGHTED BY THE DEVASTATION MY STATE ENDURED BECAUSE OF VIOLENT WINTER STORMS. EFFORTS TO PREVENT FUTURE CATASTROPHIES MUST CONTINUE. WE ALL KNOW THAT IN NEARLY EVERY INSTANCE, FUNDING PROJECTS TO PREVENT EROSION AND FLOODING IS A CHEAPER INVESTMENT THAN SPENDING MILLIONS ON REPAIR WORK.

FOR THESE REASONS, I URGE YOUR COMMITTEE TO SUPPORT THE PRESIDENT'S FUNDING REQUESTS WHICH WILL ALLOW THE TIMELY PROGRESSION OF THE FOLLOWING FLOOD CONTROL AND FLOOD DAMAGE PROTECTION PROJECTS:

PROJECT	PRESIDENT'S REQUEST
SURVEYS	
ANTELOPE VALLEY STREAMS	$140,000
CALLEGUAS CREEK	$240,000
CALIENTE CREEK	$140,000
GUADALUPE RIVER	$135,000
LOS ANGELES COUNTY DRAINAGE	$370,000
SAN JOAQUIN RIVER BASIN -- TULE & KAWEAH RIVERS VALLEY	$110,000
SANTA CLARA AND SOUTH ALAMEDA	$295,000
SANTA ANA RIVER, INTERIM NO. III	$350,000
CONTINUED PLANNING	
REDBANK AND FANCHER CREEK	$700,000
SANTA ANA RIVER MAIN STEM	$4,000,000
CONSTRUCTION	
LOS ANGELES COUNTY REHABILITATION	$11,800,000
LYTE AND WARM CREEKS	$2,354,000
PAJARO RIVER	$500,000
SACRAMENTO RIVER BANK PROTECTION	$3,500,000
SAN FRANCISCO TO STOCKTON	$21,000,000
SAN LUIS REY RIVER	$1,400,000
SANTA CRUZ HARBOR	$2,230,000
SWEETWATER RIVER	$7,200,000

OPERATION AND MAINTENANCE	
LOS ANGELES/LONG BEACH MODEL	$135,000
OCEANSIDE SAND BY-PASS	$2,700,000

BECAUSE OF CALIFORNIA'S REAL NEED FOR NEW WATER DEVELOPMENT AND ADDITIONAL CONVEYANCE FACILITIES TO DELIVER IT, I WAS PLEASED TO SEE THE ADMINISTRATION'S RECOMMENDATIONS FOR:

PROJECT	PRESIDENT'S REQUEST
BUREAU OF RECLAMATION	
SACRAMENTO RIVER DIVISION	$5,362.000
AUBURN-FOLSOM SOUTH UNIT	$3,500,000
SAN LUIS UNIT	$12,490,000
SAN FELIPE DIVISION	$37,597,000
SAN JOAQUIN CONVEYANCE	$743,000

I SUPPORT THESE REQUESTS FOR FURTHER WATER DEVELOPMENT LARGELY BECAUSE OF THEIR SIGNIFICANCE TO CALIFORNIA AGRICULTURE. IT IS IMPORTANT TO RECOGNIZE THAT ONE TO TWO BILLION DOLLARS OF CALIFORNIA'S ANNUAL FOUR BILLION DOLLAR AGRICULTURE EXPORTS ARE ATTRIBUTABLE TO FEDERAL WATER PROJECTS. ASIDE FROM THIS NATION-WIDE RETURN ON CALIFORNIA'S FEDERAL PROJECTS, HUNDREDS OF MILLIONS OF TAX DOLLARS FLOW INTO THE TREASURY EACH YEAR AS A RESULT OF MY STATE'S INCREASED FARM PRODUCTIONS. CONSIDERING THAT WATER USERS ALSO DIRECTLY REPAY A SHARE OF PROJECT COSTS, IT IS CLEAR THAT THE RETURNS THESE PROJECTS GENERATE FOR THE PUBLIC FAR OUTWEIGH THEIR COSTS.

THE PRESIDENT'S BUDGET INCLUDES FUNDING FOR A NUMBER OF WORTHY PROJECTS IN THE BUREAU OF RECLAMATION LOAN PROGRAM. I AM ESPECIALLY GLAD TO SEE AMOUNTS BUDGETED FOR:

PROJECT	PRESIDENT'S REQUEST
COLUSA COUNTY WATER	$37,597,000
OAKDALE IRRIGATION	$4,970,000
SANTA ANA WATERSHED	$4,000,000
YUBA COUNTY WATER AGENCY	$8,400,000

ADDITIONALLY, MR. CHAIRMAN, I WOULD LIKE TO BRING THE OPERATION AND MAINTENANCE REQUIREMENTS OF MY STATE TO THE COMMITTEE'S ATTENTION. IT IS IMPORTANT TO RECOGNIZE THAT MANY SITES MAY NEED DREDGING AND OTHER MAINTENANCE DURING FY 86 TO INSURE MAXIMUM PUBLIC BENEFITS FOR NAVIGATION, HYDROPOWER AND FLOOD CONTROL. HOWEVER, GIVEN BUDGET CONSTRAINTS AND THE FACT THAT SPECIFIC ALLOCATIONS OFTEN IMPEDE THE CORPS' ABILITY TO ADJUST TO CONTINUOUSLY CHANGING NEEDS, I WILL NOT MAKE SPECIFIC REQUESTS AT THIS TIME. RATHER IT IS MY HOPE THAT THE CORPS, AS IT DID DURING FY 85, WILL ADDRESS THESE CRITICAL NEEDS AS CIRCUMSTANCES MERIT ACTION.

IN SOLVING THE PERENNIAL DILEMMA OF TOO MANY REQUESTS AND TOO LITTLE MONEY, I ASK THIS COMMITTEE TO FACTOR IN THE COST OF NOT SPENDING FEDERAL FUNDS. GIVEN THE BUDGET CONSTRAINTS THAT ALL OF US FACE THIS YEAR, AND MY INTENT NOT TO REQUEST A TOTAL AMOUNT OF FUNDS FOR CALIFORNIA PROJECTS ABOVE THE PRESIDENT'S RECOMMENDATIONS, IT IS EXTREMELY DIFFICULT TO SELECT AMONG THE MANY WORTHY PROJECTS IN MY STATE. THROUGH AN EVALUATION OF CALIFORNIA'S COLLECTIVE WATER POLICY NEEDS, I RECOGNIZE THAT SOME PROJECTS HAVE BEEN EXCLUDED FROM THE BUDGET WHICH ARE ESSENTIAL AND THAT SOME MAY NEED MORE FUNDS THAN THEY HAVE BEEN ALLOCATED IN THE BUDGET. THEREFORE, MR. CHAIRMAN, I WANT TO HIGHLIGHT THE PROJECTS THAT FALL WITHIN THIS CATEGORY:

PROJECT	REQUEST

COTTONWOOD CREEK $500,000

TEHAMA COUNTY'S COTTONWOOD CREEK PROJECT IS ONE OF THE MOST IMPORTANT TO FLOOD CONTROL NEEDS ON COTTONWOOD CREEK AND ALONG THE SACRAMENTO RIVER. THIS UNCONTROLLED STREAM HAS ENOUGH WATER TO MEET THE INCREASING FUTURE WATER NEEDS OF THE SACRAMENTO VALLEY. I UNDERSTAND THERE IS SOME QUESTION AS TO WHETHER COSTS WILL BE WITHIN THE SWP ABILITY TO PAY. I HOPE YOU WILL APPROPRIATE $500,000 SO THE CORPS CAN WORK WITH THE SWP CONTRACTORS TO RESOLVE THIS ISSUE AS SOON AS POSSIBLE.

LAKE ELSINORE MANAGEMENT PROJECT $500,000

THE LOAN AND GRANT APPLICATION FOR THE LAKE ELSINORE PROJECT WAS RECENTLY APPROVED BY THE SECRETARY OF INTERIOR. IT IS MY UNDERSTANDING THAT HAD THE APPICATION BEEN APPROVED BEFORE THE BUDGET WAS SUBMITTED, LAKE ELSINORE WOULD HAVE BEEN FUNDED. FUNDING DURING FISCAL YEAR 1986 WILL ALLOW THE DETAILED PLANNING AND ENGINEERING FOR THIS IMPORTANT PROJECT TO PROCEED IN A TIMELY MANNER.

CALIFORNIA STORM AND TIDAL WAVES STUDY

($750,000 WAS REQUESTED BY THE PRESIDENT)

THIS STUDY HAS GROWN AS OTHER CALIFORNIA COASTAL COMMUNITIES HAVE EXPRESSED INTEREST TO THE CORPS. IT IS MY HOPE THAT SUFFICIENT FUNDS WILL BE BUDGETED SO EXPANSION BY THE CORPS WILL NOT CAUSE DELAYS IN THE ORIGINAL SEGMENT OF THE STUDY.

IT IS MY HOPE THAT THE COMMITTEE WILL EVALUATE THESE REQUESTS AND TRY TO LOCATE ADDITIONAL FUNDS WITHIN THE PRESIDENT'S BUDGET. IT IS NOT MY INTENT FOR ANY ONE PROJECT TO BE SINGLED OUT TO MAKE ROOM FOR THESE ADDITIONAL REQUESTS, AS THERE ARE MANY WORTHY PROJECTS WHICH I HAVE NOT DISCUSSED TODAY. HOWEVER, IT IS

MY HOPE THAT THROUGHOUT THIS OVERALL BUDGET, THERE MAY BE ROOM TO MAKE MINOR CHANGES; CHANGES THAT WOULD NOT SIGNIFICANTLY IMPEDE ANY ONE PROJECT BUT WOULD ALLOW THE TIMELY PROGRESSION OF THE ABOVE MENTIONED PROJECTS.

MR. CHAIRMAN, I APPRECIATE THIS COMMITTEE'S CONSIDERATION OF THE REQUESTS THAT I HAVE OUTLINED. I WANT YOU TO KNOW THAT I UNDERSTAND THE DIFFICULTY OF YOUR SITUATION BECAUSE OF THE PRESENT BUDGET CONSTRAINTS. THE FAIRNESS OF YOUR COMMITTEE IN MATTERS OF THIS KIND HAS BEEN EVIDENT IN THE PAST, AND I KNOW THAT YOU WILL GIVE THESE RECOMMENDATIONS YOUR FULL CONSIDERATION. FOR THIS, I THANK YOU AND THE OTHER MEMBERS.

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STATEMENT OF SENATOR ALAN CRANSTON OF CALIFORNIA

Mr. Chairman, I appreciate the opportunity to present the Senate Appropriations Committee Subcommittee on Energy and Water Development with my views on Fiscal Year 1986 funding for Corps of Engineers and Bureau of Reclamation projects in California.

As you're aware, the Reagan Administration has requested $135,674,000 for the California programs of the Bureau of Reclamation and $152,821,000 for the flood control and navigation programs of the Corps of Engineers in the state in Fiscal 1986. This represents a slight increase over the Fiscal 1985 appropriation for these California programs.

I'm very pleased to note that the budget includes adequate funds for many important California projects, including $3.5 million to continue the Sacramento River Bank Protection project, $743,000 for the San Joaquin Valley conveyance study, $2.7 million to complete construction and operate the Oceanside Expermimental Sand By-Pass System, $2.23 million to provide the federal share of purchase of a dredge for Santa Cruz Harbor, $21 million to deepen the San Francisco Bay to Stockton Ship Channel, $1.3 million to start the Sacramento Deepwater Channel project, and many others.

As in past years, the California Water Commission and the California Marine Affairs and Navigation Conference have carefully reviewed the President's proposed budget and are offering suggestions to the Senate Appropriations Committee. The Water Commission has exercised great restraint and is recommending the appropriation of only $500,000 over the Administration's budget request. The additional funds are being requested for the Cottonwood Creek Project.

Cottonwood Creek (Corps advanced engineering and design)
Flood control is very much needed to protect lands in Tehama County and along the Sacramento River. Additionally, Cottonwood Creek is the only uncontrolled stream in the Sacramento Valley with sufficient water to meet future water needs. The Corps is completing final design and engineering studies for the Cottonwood Creek Project and should be ready for construction in 1989. However, I understand the Corps did not request FY 1986 funding for this project because there is no commitment yet from the State Water Project contractors to purchase project water. An appropriation of $500,000 in Fiscal 1986 to continue the Cottonwood Creek Project investigation would permit the Corps to work with the State Water Project contractors to resolve the issue of affordability.

The Water Commission is also recommending additional funds through reprogramming for Antelope Valley Streams, Los Angeles Drainage Area, Mojave River Dam, San Joaquin River Basin, Santa Ana River and Orange County Interim II, Lower San Joaquin River and Tributaries, Wildcat and San Pablo Creeks, Grass Valley Debris Dam, and Elsinore Valley Municipal Water District loan. I support these recommendations of the California Water Commission.

Grass Valley Debris Dam (Bureau construction)
Mr. Chairman, last year the Congress approved legislation which I sponsored authorizing the Trinity River Stream Restoration Project. The project is designed to restore the fish and wildlife populations lost as a result of construction in the early 1960's of the Trinity River Division of the Central Valley Project. One feature of the program is the Grass Valley Debris Dam. There is widespread support for this project and the State of California and local interests have agreed to share in the costs. Only 35 percent of the costs are to be born by the federal government. Thus, I hope the Appropriations Committee

will be able to provide funds to initiate this important work in Fiscal 1986.

Lake Elsinore and Rancho California (Bureau loans)
Since the first of the year, the Bureau of Reclamation has approved two California projects for funding under the Small Reclamation Projects Act -- Elsinore Valley Municipal Water District and Rancho California Water District. The Elsinore project addresses serious public health and safety problems. An appropriation of $500,000 as recommended by the California Water Commission would permit work to begin on the Elsinore project.

The Rancho California project would allow the district to enlarge and enhance its groundwater storage capabilities and become more independent of imported water. The Water Commission will be reviewing the Rancho California project at its May meeting and be making a recommendation regarding Fiscal 1986 funding for Rancho California at that time..

The California Marine Affairs and Navigation Conference is recommending $42,010,000 over the Reagan budget request for nagivation and port projects. I recognize that a 65 percent increase in the Corps California navigation budget is unlikely given the federal deficit and the need to cut federal spending. However, I feel that a number of the projects mentioned by the Conference should be funded if reductions can be found in other areas.

Coast of California Storm and Tidal Waves (Corps study)
I'd particularly like to mention the Coast of California storm and tidal waves study. Originally focused on San Diego County, the study has been expanded to look at the erosion problem along the entire California coast. Southern Californians are concerned that if the study is funded at $750,000 as proposed by the

Administration, it will delay the completion of the investigation and availability of important information. An appropriation of $1.5 million in Fiscal 1986 as recommended by CMANC will permit the Corps to work at full capability and undertake more research along the San Diego coastline without jeopardizing other contemplated study work on the coast.

Port San Luis (Corps construction)

Port San Luis has suffered $30 million in storm damage primarily because of inadequate southerly protection. Last year Congress appropriated $600,000 for the Port San Luis breakwater. However, due to slippage, only $150,000 has been made available to the Corps to address this serious problem. The appropriation of an additional $450,000 as recommended by CMANC is needed in Fiscal 1986 to enable the Corps to complete the design of the reformulated Port San Luis breakwater.

Mr. Chairman, should it be possible to increase the California water project budget, I hope that you will give most careful consideration to these recommendations. In the event you choose to provide funds through reprogramming, I would be happy to work with the Senate Appropriations Committee to this end.

On behalf of California, I thank you for your attention to the state's water needs.

CALIFORNIA NAVIGATION PROJECTS

STATEMENT OF CALIFORNIA MARINE AFFAIRS AND NAVIGATION CONFERENCE

Two years ago, this witness appeared before you to present recommendations on behalf of California navigation and related public works projects. The testimony marked the 25th consecutive year of such representation, and more than two score Californians were on hand to participate in the presentation as witnesses, to submit testimony or be introduced as sponors of projects.

That event contrasted markedly with my 1959 appearance before this body -- a solo performance, unaccompanied by other witnesses or project sponsors.

In the ensuing 27 years, changes have been many in the context of ground rules for hearings and testimony. But some elements remain the same: C-MANC is here to present its recommendations which have the unanimous approval of our membership, for funding of California projects for the coming fiscal year, to submit our schedule, together with written testimony, with our request that they be included in the record of these proceedings.

Unlike the far more structured, formal hearings of today, testimony was given a quarter of a century-plus ago with seemingly much less pressure and certainly, with fewer participants. Perhaps all were more relaxed then because the ground rules -- largely unwritten -- defined our mission, perogatives and limitations very clearly. "Capabilities" of the Corps of Engineers had a definite meaning. Relied upon, and for good reason, was the expectation that there would regularly be omnibus public works authorization bills, which were approved by the Congress and enacted into law without override. And funding of the various categories and activities of public works as approved by the Congress was actually expended in full in most instances, on the basis of traditional Federal repsonsibility for navigation and other projects.

Most of these "absolutes" have long since withered away in the blast of new fiscal policy, budgetary imperatives and the responses of various administrations. Congressional latitude and authority have been sharply limited. The role of project sponsors and proponents similarly has suffered, as we are increasingly uncertain as to what is expected of us. As each session of each Congress arrives, there are assurances that "this will be the year" of the long-awaited legislation to "sort things out". Meanwhile, in the absence of such ground rules, the administrative agencies proceed to deal with project sponsors in a manner assuming that Congress has acted and there are new policies and authority on the books.

Never having been critical of the appropriations process, C-MANC does not now questioned the sincerity of this Committee nor doubt that you share in our frustration and often feelings of helplessness. We can do no more today than to once again present our recommendations for funding of our projects, noting that in most instances, Members of the California Delegation have already joined in testimony supporting these requests.

However, this witness cannot resist the temptation to excerpt certain quotes and materials from the previous 26th statements which I have submitted to this Committee over an equal number of years, to demonstrate the consistency of our belief in California, its growth, economic significance to the nation, importance to our security, and the value of our commercial navigation and the many benefits of our recreational and shallow draft harbors and waterways.

> "To assure you ... of the unity of purpose and interest ... in support of these projects ... (and) the President's ... budget as it concerns navigational projects ... each ... has strong local support (and) these recommendations ... relfect not optimum maximums -- but realistic minimums -- vital to ... continued growth and prosperity." (1959)

"Owning to the foresight ... of this Committee, and of the Congress in general, our regional ports have become one of the nation's key shipping complexes and a major element of our national maritime industry ... every local port and project on our list has made a substantial contribution toward providing improved navigational facilities: we do not expect federal assistance to those who do not aid themselves." (1961)

"Attached is a list of the forty-two counties, cities, ports, and labor and trade organizations which have formally endorsed and supported our recommendations for ... appropriations". (1962)

"In the free world, California's economy is surpassed only by the nation's and that of Germany, the United Kingdom, France and Japan ... California has surpassed New York as the nation's leading export state ... there is no question but that navigation has been essential to (this) growth ... but all of this has been achieved with minimal Federal support ... only 5% of the Corps of Engineers' civil works budget is spent in California, and of this 5% less than a third has been allocated to navigation." (1966)

"We tend to forget two quite simple facts. First, with rare exceptions, no major heavy industrial development occurs except where water transportation is available; second, as a corollary, industrial growth is not likely to occur in the future except where major advantages of waterborne transportation costs may be realized ... without aircraft, we would revert in transportion speeds to the early 20th century; lacking water transportation, civilization as we know it could not exist." (1967)

"Productivity holds the key to most if not all of our current and even long term problems ... effective use of our rivers and ports must be considered a key element ... of progress. In 1970, this nation's oceanborne dry-bulk trade amounted to 174 million tons -- 35% of the world total. ... Your Committee is well aware also of the continuing extraordinary growth and consequent stimulus to the economy of recreational boating ... Nowhere more evident than in California -- despite the relatively inhospitable nature of much of our coastline ... " (1971)

"In reviewing these requests, and in actions we take in recommending to the Congress the changes to be made in the President's budget, you are defining again the key role of the appropriations' process. This role extends far beyond the mere allocation of funds, for that allocation determines our national priorities and goals, and how and when they are met ... (But) instead of such national response, we have faced a confusing and often counterproductive flow of proposals, guidelines and edicts, all affecting criteria, local guarantees, pollution standards and a host of related problem areas ... Most importantly, public works funding is so affected" (1972)

"This condition -- which we and others have cited and testified to for some years now -- is rapidly worsening ... " (1973)

"I am convinced that this Committee, in its allocation of Federal funds for navigation, has contributed more to the stature of the United States, with less waste, than any other comparable Congressional body." (1974)

"If we cannon maintain and improve navigational access needed to meet modern technology, not only will our shipping suffer, but also, the very bases of our economy will be adversely affected. World trade involves every facet of our lives ... increasingly dependent ... on offshore markets and sources of materials. Competition for world markets ... demands efficient waterborne

commerce ... Public understanding of ... needs and opportunities is more essential than ever to achieve the progress needed" (1975)

"In almost two decades of annual appearances ... we have reported to you how the winds of change -- of funding, policies and their administration -- have affected California, and in particular, our navigation and related projects. We have changed from the relatively simplistic and reasonably expeditious (and certainly understandable) procedures and steps ... to a far more adverse environment ... the test tube for this brew of frustration, delay and deferred priorities ... (the) process is vastly more complicated, much more difficult of achievement, and certainly more consuming of time, effort and funds." (1977)

"A tangle of regulations, red tape and bureaucratic muddle characterizes many of the problems faced by project sponsors, large and small ... recreational and shallow draft commercial boating facilities have not kept pace with California's growth nor with demands ... We continue in concern long expressed as to pressures demanding Congress impose policies leading to cost-recovery levies ... rather, such taxes or tolls as may emerge ... should continue to be predicated on a philosophy that treats such revenues as supplemental, and properly so. Benefits of navigation are so widespread that major changes and assessement would cause critical disruption of private investments along waterways and ... harbors ... coupled with ... decrease in funding for projects generally, deauthorizations, appropriations' impounding and reduced or extended studies ... (and) budgetary-mandated policies to preclude new starts ... the outlook worsens" (1978)

"Concern with ever-rising public expenditures at all levels of govenment is now a well-defined theme, and nowhere more evident than in California, birthplace of Proposition 13. At the same time, the dynamics of our state and its growth ... reflect and exceed those of national averages". (1979)

"Navigation (is) fuel-efficient, cost-effective, environmentally superior, security essential, and water-related recreation, perennially the most popular ... At this time of ... mandated action to cut government expenditures ... critics say why can't (navigation projects) "pay their own way" ... in the 200-plus years of our nation's existence, it is difficult ... to cite another traditional federal responsibility, annually funded, which has reached such major benefits for all ... regrettably, the modest proportions of Federal budgets allocated have steadily declined on a percentage basis. Fewer and fewer projects are initiated, the time it takes to plan and have them approved stretches into decades today, their (construction) initiation has become a matter of conjecture at best". (1980)

"Almost 20 years ago, the significance of Customs revenue -- to a large extent dependent upon waterborne commerce -- was cited in my testimony ... repeatedly recommended was active consideration of allocation of a reasonable portion ... to meet Federal navigation system responsibilities which make possible the major portion of Customs receipts ... there is ample precedence". (1982)

"California maintains its leading role ... for example, Los Angeles-Long Beach vessel arrivals again led the nation, and together with Golden Gate traffic, accounted for 10,106 arrivals ... or almost 27% of the volume at the (nation's) leading 11 port areas ... But (these) contributions to the national wellbeing of course require continued, significant investments ... and

responsibilities of the Federal Government must also continue ... (however) a 1983 report ... indicated that such funding (of public works projects) dropped in the last 20 years from 4.1% to 2.3% of the GNP -/ a dramatic decline of 44%". (1984)

Mr. Chairman and Members, it has been my pleasure to appear before you once more and for the 27th year, to thank this Committee for the opportunity to submit testimony and these recommendations, and present and introduce our members, project sponsors and supporters.

# # #

Attached: Funding Recommendations

(Amounts in Thousands)

Projects	Total Cost C of E	Balance After FY 1984	FY 1985 Conference Allowance	FY 1985 Work* Allowance	FY 86 President's Budget	CHANC FY 86 Requests	Purpose of New Funding
POTENTIAL NEW NAVIGATION STUDIES							
Humboldt Harbor & Bay (Deepening)	315	315	0	0	0	315	Initiate and complete Recon Study
Marin County Shoreline	400	400	0	0	0	400	Initiate and complete Recon Study
San Francisco Bay and Tributary Deep Water Ports (Dredging)	155	155	0	0	0	0	Study being accomplished under O&M
Santa Barbara Harbor (Restudy)	640	640	0	0	0	640	Initiate and complete restudy
Santa Cruz Harbor	145	145	0	0	0	145	Initiate and complete study
West Newport Beach Harbor	250	250	0	0	0	250	Initiate and complete recon study
NAVIGATION STUDIES IN PROGRESS							
Coast of Northern California (Harbors for Light Draft Vessels) (Moss Landing)	693	269	189	189	0	80	Complete feasibility study
Morro Bay Harbor	1,100	946	0	0	0	230	Continue study
North Coast of Los Angeles County	805	640	0	0	0	250	Continue study
Oceanside Harbor	785	105	0	0	0	105	Complete feasibility study
Redondo Beach Harbor (King Harbor)	720	596	240	240	0	250	Continue study
San Francisco Bay Area (In-Depth)	3,210	553	147	147	132	406	
Int #4 (Collection & Disposal of Debris)	(465)	(279)	(147)	(147)	(132)	(132)	Complete feasibility study
Int #5 (Redwood City Harbor)	(461)	(274)	(0)	(0)	(0)	(274)	Complete feasibility study
San Francisco Bay Shoreline	3,780	2,065	400	400	520	595	
Int #1 (Alameda & Santa Clara)	(1,550)	(415)	(120)	(120)	(295)	(295)	Complete feasibility study
Int #2 (San Mateo)	(1,210)	(830)	(300)	(280)	(225)	(300)	Continue study
Int #3 (North Bay)	(1,020)	(820)	(0)	(0)	(0)	(0)	
San Leandro Bay	1,405	1,355	0	0	0	400	Continue study
Sunset Harbor	820	174	100	50	0	124	Complete feasibility study
Ventura Marina	625	625	125	125	100	250	Complete Recon study; initiate feasibility
SHORE PROTECTION STUDIES IN PROGRESS							
Point Mugu to San Pedro Breakwater	1,290	1,166	0	0	0	300	Continue feasibility study
Santa Barbara County	320	229	150	150	0	79	Complete study
SPECIAL STUDIES							
Coast of California, Storm and Tidal Waves	7,600	5,425	700	700	750	1,500	Continue studies of conditions along entire coast of California

*Reflects assigned savings and slippage and other adjustments

(Amounts in Thousands)

Projects		Total Cost C of E	Balance After FY 1984	FY 1985 Conference Allowance	FY 1985 Work* Allowance	FY 86 President's Budget	CHANC FY 86 Requests	Purpose of New Funding
CONTINUATION OF PLANNING AND ENGINEERING STUDIES								
Los Angeles - Long Beach Harbors		1,240,000 ##						
		(1,900)	(1,900)	(250)	(0)	(0)	(1,200)	Initiate design
Oakland Inner Harbor		30,000 ##						
		(660)	(635)	(0)	(0)	(380)	(635)	Complete design
Richmond Harbor		43,800						
		(625)	(625)	(100)	(100)	(525)	(525)	Complete design
ADVANCE ENGINEERING AND DESIGN								
Noyo River and Harbor (Channel Extension)		2,200 ##						
		(580)	(130)	(0)	(0)	(0)	(130)	Complete design
Noyo River and Harbor (Breakwater)		7,130 ##						
		(1,633)	(860)	(0)	(0)	(0)	(400)	Continue design
POTENTIAL NEW CONSTRUCTION PROJECTS								
Oakland Outer Harbor	(N)	27,700 ##	27,700	0	0	155	6,000	Complete design and initiate construction
Sacramento River Deep Water Ship Channel	(N)	43,200	43,200	0	0	1,300	3,000	Initiate construction
CONTINUING CONSTRUCTION PROJECTS								
Bodega Bay	(N)	1,150	565	0	0	0	2,095	Corps should reimburse Port for Federal share of project cost
Fisherman's Wharf Area	(N)	11,700	11,350	3,000	3,000	5,000	8,350	Complete construction of project
Port Hueneme	(N)	3,561	2,080	0	0	0	2,080	Complete deepening of harbor
Port San Luis	(N)	11,400	10,830	600	150	0	450	Complete design of reformulated project
San Diego River and Mission Bay	(N&FC)	19,800	7,895	0	0	0	600	Complete design and initiate and complete modification for flood control
San Francisco Bay to Stockton (John F. Baldwin and Stockton Ship Channels)	(N)	149,000	127,637	18,400	15,880	21,000	21,000	Complete deepening of Stockton channel; continue deepening of South Hampton Shoal channel and Richmond Harbor manuvering area
Santa Cruz Harbor	(N)	4,202	2,350	0	120	2,230	2,600	Federal share of dredge construction cost
Imperial Beach	(BE)	3,340	493	493	493	0	0	Project wil be completed with available funds
Surfside-Sunset and Newport Beach	(BE)	32,200	22,306	0	0	0	0	Beach nourishment not expected to be required in FY 1986

* Reflects assigned savings and slippage and other adjustments
Total Cost

Projects	FY 84 Estimated Obligations	FY 1985 Estimated Obligations	FY 86 President's Budget	CMANC FY 86 Budget req.	Purpose of New Funding
		OPERATIONS AND MAINTENANCE PROJECTS			
Bodega Bay Harbor	0	357	0	0	No requirement expected in FY 86
Channel Islands Harbor	116	3,537	0	0	Dredging accomplished in FY 85
Crescent City Harbor	1,830	1,485	2,138	5,000	Breakwater repair and dredging in FY 86
Dana Point Harbor	35	22	0	700	Periodic Maintenance
Halfmoon Bay Harbor	0	371	0	0	No requirement expected in FY 86
Humboldt Harbor and Bay	2,433	7,815	4,625	9,000	Breakwater repair in FY 86 (if not accomplished in FY 85)
Los Angeles-Long Beach Harbors	338	843	0	3,500	Maintenance dredging at mouth of LA River and breakwater repair
Los Angeles-Long Beach Harbors Model	711	130	135	1,200	Conduct model studies
Marina Del Rey	0	0	0	1,800	Periodic maintenance
Morro Bay Harbor	247	2,098	0	0	No requirement expected in FY 86
Moss Landing Harbor	417	377	0	0	No requirement expected in FY 86
Napa River	0	0	0	0	No requirement expected in FY 86
Newport Bay Harbor	0	0	0	400	Periodic maintenance
Noyo River and Harbor	649	121	460	460	Periodic maintenance
Oakland Harbor	1,333	1,553	1,240	1,600	Annual maintenance
Oceanside Harbor	785	109	660	800	Annual maintenance
Oceanside Experimental Sand By-Pass System	1,485	694	2,700	2,700	Complete construction; operate by-pass plant
Petaluma River	963	59	0	2,500	Dredge channel across flats
Port Hueneme	0	31	0	0	No requirement expected in FY 86

Port San Luis	39	296	0	0	No requirement expected in FY 86
Redondo Beach Harbor (King Harbor)	44	25	0	400	Condition study
Redwood City Harbor	3,078	0	0	500	Dredging small craft channel
Richmond Harbor	3,156	1,909	1,780	1,780	Annual maintenance
Sacramento River					
Sacramento River (30 ft.)	851	1,712	2,037	2,037	Annual maintenance
Sacramento River - (Shallow Draft)	30	120	84	84	Annual maintenance
San Diego Harbor	205	55	0	0	No requirement expected in FY 86
San Diego River and Mission Bay	120	65	0	700	Complete storm damage repairs
San Francisco Bay - Delta Model Structure	1,165	1,042	1,190	1,190	Annual maintenance
San Francisco Harbor	525	1,494	1,353	1,353	Annual maintenance
San Joaquin River	867	988	2,011	2,011	Annual maintenance
San Leandro Marina	407	0	0	0	No requirement expected in FY 86
San Pablo Bay and Mare Island Strait	3,795	4,596	6,790	6,000	Corps should be able to fully maintain with this amount
San Rafael Creek	0	0	0	2,000	Periodic maintenance
Santa Barbara Harbor	627	624	792	792	Periodic maintenance
Santa Cruz Harbor	682	1,379	709	1,200	Full four phase dredging by Corps if dredge not available by FY 86
Suisun Bay Channel	304	165	725	725	Annual maintenance
Suisun Channel	0	0	0	0	No requirement expected in FY 86
Ventura Harbor	719	2,000	1,640	1,640	Annual maintenance
Drift Removal (S.F. Harbor and Bay)	1,131	1,114	1,330	1,330	Annual maintenance
Hyacinth Control	27	220	140	140	Continue control operations

Statement of Golden Gate Ports Association

This testimony is presented on behalf of the Golden Gate Ports Association, formerly known as the Northern California Ports and Terminals Bureau, Inc. It is a non-profit corporation which represents the ports of the San Francisco Bay and the Sacramento-San Joaquin delta areas; it specifically includes the public ports of Oakland, Redwood City, Richmond, Sacramento, San Francisco and Stockton and the privately owned Encinal Terminals in Alameda. These ports support our state and many states to the east through our vast rail and highway transportation systems and serve, through the Golden Gate, the ports of the world, with particular emphasis on the Pacific trading partners.

One of the most important aspects of the facilities that are provided at these ports is the depth of water in the channels that permit ships to enter and depart from the various terminal facilities. These channels have served the ports and the nation well during years of war and peace, but must continue to be maintained to provide adequate depths of water for the modern world shipping fleet. It is for that reason that the Association urges your committee to provide funds in amounts not currently shown in the President's budget to provide for additional work to modernize these channels so that the ports can remain competitive with other ports around the world in providing for international trade.

The Association recommends that these projects should move ahead with Continuation of Planning and Engineering studies in the following amounts:

- Oakland Inner Harbor - $635,000 to complete the design of the project.

- Richmond Harbor - $525,000 to complete the design.

In addition, two projects are potential new construction starts:

- Oakland Outer Harbor - $6,000,000 will provide the ability to complete design and initiate construction.

- Sacramento River Deep Water Channel - $3,000,000 will provide for initiating construction.

The San Francisco Bay Area In-Depth Study is in progress. Funds are needed to continue the studies; a total of $406,000 is recommended. Of that, $132,000 would be used to complete Interim Study No. 4 on the Collection and Disposal of Debris, and $274,000 will be used to complete a study of the Port of Redwood City needs.

The construction of the new breakwater in the Fisherman's Wharf Area in San Francisco is now underway; $8,350,000 is required to complete the project, therefore it is urged that you allocate that amount so that the project can be finished in a timely manner.

Finally, although we are not recommending any increase over the President's budget for this construction project, we would like to thank you for the appropriations made in the past and for the continuation of the funds for the very important San Francisco Bay to Stockton project known as the John F. Baldwin and Stockton Ship Channels. The $21,000,000 in the President's budget for this important project will complete the Stockton Channel and continue construction of the West Richmond phase of the project that will be very important to the ports and industries in that area.

Statement of Santa Cruz Harbor, Calif.

Santa Cruz Harbor was constructed in 1962 as a cooperative effort between the Corps of Engineers and the Santa Cruz Port District. Each winter since that date the harbor has experienced severe shoaling in its entrance. This causes operational closures of up to five months of the year and results in extreme financial hardship on commercial fishermen and marine service businesses. It also creates a severe safety hazard and prevents the harbor from being a place of refuge for coastal sailors when it is most needed.

Clearing the harbor has been a federal responsibility. Congress has spent approximately $6.5 million in the last 22 years to keep the harbor entrance open. Even this amount has not facilitated an effective job. The harbor remains impassable for 40% of the year. The prospect for the future is dismal. It is estimated that the cost to the federal government in keeping the Santa Cruz Harbor entrance open, even 90% of the time, would exceed $30 million over the next 20 years. In light of the severe restrictions on the federal budget, this appears to be an impossibility.

PROPOSAL

The acknowledged solution to the operational problems at Santa Cruz Harbor entrance is a harbor-based by-pass system. The original legislation for Santa Cruz, House Document 358 of 1957, authorized the federal government to participate with the Santa Cruz Port District in a by-pass for Santa Cruz Harbor. The federal share was to be 64.9% while the Santa Cruz Port District was to fund 35.1%. The Santa Cruz Port District has agreed to fund its 35.1% share over the next 18 months. The San Francisco District of the Corps of Engineers has acknowledged the Port's commitment and has recommended to the President that the federal share, estimated at $2.23 million, be committed in FY 1986. President Reagan's FY 86 budget does fund that amount for capital construction of a by-pass for Santa Cruz Harbor.

The Port District asks Congress to concur with the President's budget and to approve his proposed capital construction in the amount of $2.3 million.

BENEFIT

As per the 1958 legislation, once the by-pass system is established at Santa Cruz, the Santa Cruz Port District will fund all but $35,000 of the yearly operating costs of that system. The savings to the federal government

over the next 20 years will, indeed, be $30 million. At the same time, the proposed program will solve the major problem at Santa Cruz Harbor and make it the year-round center of commerce that it was designed to be.

FURTHER REQUEST

The FY 86 capital funding will provide a by-pass system for Santa Cruz by the fall of 1986 for operational use in the winter of 1986-87. The Port District requests the federal government to continue to provide contract dredging for Santa Cruz Harbor for the interim period (winter 1985-86). Four phases of dredging for this final year will require $1.2 million in the Corps of Engineers FY 86 Operations and Maintenance Budget. The Presidential Budget currently has $709,000, but this would fund only two phases and would close Santa Cruz Harbor for a number of months next winter.

STATEMENT OF SANTA BARBARA, CALIF.

There are four items of special concern to the City of Santa Barbara for which I urge your support. The first is for dredging funds (in the proposed budget) for our harbor. There are over 1,000 boats -- including 150 commercial fishing vessels -- plus a Coast Guard cutter in our harbor. Without this annual dredging the harbor entrance would sand in, and we simply would not have a harbor.

We are looking for a long-term solution to this costly annual expenditure. A request for three additional projects has been made by Congressman Robert Lagomarsino. These are funds to reactivate the Corps of Engineers Harbor Improvement study and to continue the Storm and Beach Erosion and Santa Barbara County Streams studies. These three studies are necessary to determine the best method to protect and preserve the harbor. As an expression of our great concern and willingness to cost share the Santa Barbara City Council voted unanimously on March 26, 1985 to commit to help pay for the Harbor Improvement study.

The studies and the dredging are essential for the preservation of Santa Barbara's harbor. Please support them.

Thank you for your consideration.

STATEMENT OF PORT OF REDWOOD CITY, CALIF.

I am Brenton C. Britschgi, Mayor of the City of Redwood City representing the Port of Redwood City, a wholely owned municipal deep draft port located at the southern tip of San Francisco Bay and at the gateway to the vast silicon valley in Central California.

The needs of our Nation's maritime interests require special congressional consideration, especially if we are to preserve a unique sector of the Nation's economy as represented by waterborne transportation and the commerce of the United States. We welcome this opportunity to urgently request the Congress to continue Federal funding for the improvement and orderly maintenance of the Nation's deep-draft navigation channels.

The Administration's proposed legislation for imposition of user fees and cost recovery of funding for waterway projects would change the traditional role of the Federal Government, and the various states and local authorities, whereby the Federal Government provides funding for the harbors and channels, and state and other non-federal interests finance the construction of port facilities. The partnership between the Federal Government and local interests dates back to 1824. Billions of dollars have been expended by the local interests with the expectation that the Federal Government would continue to honor its share of the "partnership", which evolved from the realization that joint ventures of Federal and local interests were essential to support both national defense and foreign trade. Port interests have progressively expended huge sums in the development and construction of Port facilities.

As a member of the U.S. Port Systems Advocates, a coalition of fifty seven ports around the nation, we strongly recommend legislation that will insure 100% Federal responsibility for projects under 45 feet in depth, including new work and operations and maintenance costs

We suggest for new projects in excess of 45 feet in depth, the local sponsor be required to finance a minimum of 25 to 50 percent of the cost of the project, for both the construction costs and the incremental increase in Operation and Maintenance costs.

H.R. 6 recognizes the equity of these considerations, and we urge favorable congressional consideration on this measure in the interests of all of the people of the United States.

San Francisco Bay to Stockton Ship Channel

Statement of Contra Costa Development Association, California

My name is Paul F. Hughey. I am the Executive Director of the Contra Costa Development Association, a non-profit Economic Development Association of Contra Costa County, California.

My organization would like to express our appreciation for the continued appropriations the Committee has provided to enable proper planning, design and construction for the San Francisco Bay to Stockton Ship Channel improvement project. This very important improvement is vital to the long range economic viability of the large area it serves. We also greatly appreciate the manner in which the Corps of Engineers is carefully considering the environmental impact of this project within the guidelines provided by the Congress. We approve of the careful analysis of environmental, economic and social factors as they relate to this project and we will cooperate fully in providing any information or assistance the Corps may require to enable proper judgement on initiating further phases of construction.

Background

The Development Association filed a brief with the Corps of Engineers in 1958, requesting a study of the feasibility of improving the main shipping channel between San Francisco Bay and the Port of Stockton. As a result, the study was funded by the Congress under an appropriation sponsored by the late Congressman John F. Baldwin. This project, described in House Document No. 208 of the 89th Congress, 1st Session was authorized and approved by the Congress in September, 1965. As a part of this project, the San Francisco Bar has been deepened from 50' to 55' and the main shipping channel into San Francisco Bay widened. Some minor additional construction was also provided near the Port of Richmond and on the levee system of the upper San Joaquin River.

In order to expedite work on portions of this overall project, the project has been divided into five phases or sections. Commencing at the entrance to San Francisco Bay, Phase 1, the widening and deepening of the San Francisco Bar to 55' has been completed.

Phase 2 consists of deepening the Southhampton Shoals Channel from 35' to 45' for a distance of approximately three miles to connect the naturally deep waters of San Francisco Bay and West San Pablo Bay. The State of California, Congressman George Miller, the Contra Costa County Board of Supervisors, and local interests all support this phase of the overall project. It will provide the vitally needed deeper channel for the Port of Richmond which has placed its first container birth in operation, provide a better approach to the Chevron, USA, Richmond Refinery wharf, and provide a needed deeper channel for the U.S. Naval Fuel Supply Depot at Point Molate, near Richmond, and the bulk liquid facilities of the Port of Richmond at Point San Pablo. The Corps of Engineers has awarded an $8.3 million contract to commence construction of Phase 2 and the order to proceed was issued January 18, 1985.

Phases 3 and 4 consists of deepening the existing 36' channel through San Pablo Bay and the lower Suisun Bay 35' Channel to 45'. Corps model studies indicate that this phase will induce an increase in salinity levels in the Delta. Therefore, the Corps is conducting engineering and model studies on various types of underwater salinity barriers or sills in the Carquinez Strait to mitigate the effects of the project.

Phase 5 consists of deepening the Stockton Channel and upper Suisun Bay Channel from the existing depth of 30' to 35' from Point Edith, upstream of Martinez, to the Port of Stockton. Construction commenced on this phase in October, 1982, and will be completed this fiscal year.

The Economy

The San Francisco Bay is known throughout the world as one of the world's great harbors. In 1978, the latest year for which Corps of Engineers figures are available, some 56 million tons of cargo passed through the Golden Gate. Almost two-thirds of this total passed over the public and private docks of Contra Costa County and the Port of Benicia in adjacent Solano County via the existing John F. Baldwin Ship Channel.

All six of the petroleum refineries in Northern California, representing some 800,000 barrels per day of throughput, lie on this channel. Also on this channel is the world's largest sugar refinery, C&H at Crockett, importing almost 1 million tons of sugar each year, steel plants, chemical plants, paper mills, a gypsum plant, expanding general cargo facilities, and electric power generating plants of the Pacific Gas and Electric Company which are partially dependent upon shipment of fuel oil.

Also served by this channel are three important naval installations; the Naval Fuel Supply Depot at Point Molate, near Richmond; the U.S. Naval Shipyard (a Nuclear Submarine Facility) at Mare Island, Vallejo; and the U.S. Naval Weapons Station at Concord which is shifting to containerization and which will require a deeper channel. The importance of a safe and adequate shipping channel to our Navy is obvious. It might be noted that the Corps does not include national defense installations in computing the cost-benefit ratio of projects.

Mr. Chairman, given the present balance of payment problems, it would seem obvious that everything possible should be done to reduce transportation costs, improve efficiency, and minimize environmental impacts.

In 1979, some 1,200 tankers entered San Francisco Bay. Over 250 of these vessels had a draft of 35' or more which is the present dock side depth of all of the petroleum refineries and terminals on the channel. These vessels have to anchor in South San Francisco Bay and have a portion of their cargo lightered off before they can proceed partially loaded to the refinery or terminal docks. This is an environmentally unsound practice, since it is known that the greatest risk of oil spillage occurs when it is necessary to transfer cargo. A deepening of the channel would enable these ships to proceed directly to their docks, thereby reducing time and transportation costs and reducing environmental hazard.

Conclusion

Mr. Chairman, the long-range viability of the San Francisco Bay Area regional economy is dependent upon the completion of this project. The last significant improvements to this main shipping channel were completed in the 1930's. The world shipping fleet has changed dramatically since that time. The ships are much larger in every respect and unless this channel is improved, the region cannot remain competitive to the detriment of our nation. Given the importance of international trade, the balance of payments and the very large sums collected in customs receipts by the San Francisco District each year, true national interests are involved.

We request the Committee to appropriate the amount of $21,000,000 as contained in the President's Budget to enable this project to proceed expeditiously.

Mr. Chairman, we thank the Committee for its attention to our concerns. Thank you.

SACRAMENTO RIVER DEEP WATER SHIP CHANNEL

STATEMENT OF PORT OF SACRAMENTO, CALIF.

Summary of Request

Thank you, Mr. Chairman and members of the Subcommittee, for this opportunity to present testimony on behalf of the Sacramento River Deep Water Ship Channel deepening project.

The deepening of the Sacramento River Deep Water Ship Channel, following sixteen (16) years of study and review by the Corps of Engineers, is more than ready for the commencement of construction. Accordingly, we ask that your Honorable Committee include an item of $3 million to allow the Corps to begin construction. We fully expect that the efforts of the authorizing committees will be successful this year. If they are, all current bills pending would authorize this project. If for some reason that effort should fail, we ask that your committee include the necessary authorizing language in your bill, as has been done on some rare occasions in the past.

COST SHARING

Your Committee is well aware, I know, of the efforts to increase the participation of non-federal sources in funding harbor and channel dredging works. Indeed, reference has been made before your Committee by Mr. Robert Dawson, Assistant Secretary of the Army (Civil Works) as the management and Budget (OMB) and the Administration about my letter dated January 18, 1985 to Mr. Dawson, (see Exhibit 'A' Attached). The Administration in recommending the inclusion of $1.3 million for commencement of construction of this project, has apparently suggested that the referenced letter constitutes our agreement to fund seventy percent (70%) of the project cost on a local basis. Reference to the letter will reveal the emphasis that was placed upon keeping the Port in a competitive position. There is no known way to achieve that with a local source of funds. In addition, the prevalent opinion in the Administration seems to be that the sole cost involved in a project is the dredging cost. Such dredging projects would be worthless without the addition of cargo handling facilities. Thus, these faciilties and the existing local cooperation exhaust almost all the financing capability of most ports. In the case of Sacramento, the local people have already invested over $41 million for these purposes.

We, of course, are very pleased that the Administration has recognized the overriding value of this deepening project by including it among its recommended new starts. We will be prepared to cooperate in attaining the goal of a deeper channel in any reasonable way. The suggestion that the Port produce 70% of the required funding - in addition to the suggested local funding of Operations and Maintenance -- is a pointless exercise. It would be beyond our capability, as it would be for almost all ports in this country. Yet the value of the ports of this country relative to the national financial picture is obvious to any who will consider it.

EXPECTATIONS EXCEEDED

When the Corps of Engineers studied the project (which ultimately led to the creation of the current channel and harbor) in 1955, they concluded that the project would be economically viable if on the average it handled 857,000 tons per year over the 50 year economic life. In our twentieth year (1983) the 30

millionth ton of cargo moved across the docks. By the Corps' projections, that should not have occurred until 1998. The level of cargo moving across the docks has reached as much as 3.25 million tons in one year. That level of activity should have occurred in the year 2060, by the Corps' projections. Thus by any measuring stick the Port has proven its worth.

NEED FOR DEEPER WATER

The bulk cargoes presently moving through the Port sorely require deeper water. Bulk cargoes require larger vessels to minimize the per-ton cost for ocean freight. To continue to successfully compete in the world markets, the Port's shippers must be able to charter larger vessels with deeper drafts. To do any less makes them non-competitive and destroys their ability to foster our country's exports.

Just two of the Port's cargoes will serve to demonstrate the need. Last year the majority of the ships loading grain for export at Sacramento had to be topped-off at deeper water. When the Port started its wood chip export program in 1967, the ports at the receiving end had only 27 feet of draft capability. At that time Sacramento's 30 feet was ample. Now those same receiving ports offer 12 meters (over 39 feet) draft.

In both these cases, the long term picture can only mean that Sacramento will gradually be bypassed and eventually wither and die if deepening is not accomplished. It should be pointed out that these exports contribute to helping solve the continuing United States balance of payments problem.

B. C. RATIO

The Corps' Feasibility Report shows that the deepening of the channel to Sacramento will produce a 2.5 benefit-cost ratio when evaluated at the interest rate of 7 1/8%. Recent updating, using the higher rate of 8 3/8%, produces a benefit-cost ratio of 2.3. Typically, navigation projects have not shown well at these high interest rates which adversely affect the B/C ratio by tending to minimize annual benefits and exaggerate annual costs. We expect the B/C ratio to increase when the cost of the originally anticipated mitigative measures is finally greatly reduced.

ADDITIONAL VALUES

Deepening the channel will also serve the energy conservation needs of the country. When ships can be fully loaded at the Port, it will avoid the need to move cargoes to more distant ports by land transportation means. It is even more dramatically evident now in the 1980's that water transport is many times more fuel-efficient per ton of cargo than land transportation. The needs of national defense will also be better served by making the Port more accessible to naval and merchant marine vessels that require the deeper draft.

SUMMARY

I wish to thank you, Mr. Chairman and your Subcommittee, both for hearing this testimony and for your considerable past help in including and augmenting appropriations for the Sacramento River Deep Water Ship Channel deepening study.

The Port of Sacramento has well demonstrated its success in utilization of the Ship Channel at its present depth. Cargo handling developments in general and specifically at Sacramento clearly indicate the need for deeper draft to accommodate the larger ships handling bulk cargoes.

I regret that I can find little in the Administration's proposal to support. Should they require additional sources of funds in the form of a user charge, then only a uniformly applied charge can keep from causing havoc to this industry that is essential not only to the physical well-being but the financial well-being of this country. I respectfully urge your Honorable Committee to continue your fine efforts to break the long hiatus on new navigation starts in this country and to include an item of $3 million, which sum we believe the Corps of Engineers can economically utilize to initiate construction on this project.

LETTER FROM MELVIN SHORE, PORT DIRECTOR, PORT OF SACRAMENTO, CALIF.

January 18, 1985

Mr. Robert K. Dawson
Acting Assistant Secretary of the Army
(Civil Works)
Department of the Army
Office of the Assistant Secretary
Washington, DC 20310

Dear Bob:

Thank you for your letter of January 9, 1985 indicating that your objective is to keep our deepening project in the President's budget for FY 1986. Specifically you ask if we would be willing to fund 70% of the total capital cost of the project.

You noted the terms to which we previously agreed to a 50-50 cost-sharing in my letter of November 29, 1984. Those terms were:

> The Sacramento-Yolo Port District can undertake the proposed cost-sharing approach to the total project only if enabling legislation applicable to all ports permits each port authority to levy a user charge which is uniformly applied to vessels and/or their cargoes, using the deep water ports of the United States; or permits the diversion of some portion of customs fees for that purpose; or provides some other statutory authority applicable to all ports that would generate revenue from users of the facility and permit the continuation of competition among public ports and provide sufficient revenues to amortize and make saleable self-supporting revenue bonds to be repaid over an extended period of years for advancement of its share of the total initial construction cost.
>
> Further, this letter of intent is given with the understanding that if the Sacramento-Yolo Port District cost-sharing proposal is acceptable to the Assistant Secretary of the Army (Civil Works), he will recommend to the Office of Management & Budget that an appropriate request for funds to support the Sacramento River Deep Water Ship Channel construction be included in the

President's Budget for Fiscal Year 1986. If such a request for funds is not included in the referenced Fiscal Year 1986 Budget, this letter of intent is null and void. As previously recognized, if legislation should be enacted which changes cost-sharing that would be applicable to this project, such cost-sharing provisions would supersede this financial agreement.

Subject to these terms, Bob, we would not only agree to a 70% share, as you suggest, but indeed would agree to a 100% share. I think you will note that these terms are consistant with the position we have taken from the very first introduction of a user charge/cost-sharing concept. We have said that IF there is to be a user charge it must be uniformly applied. In the alternative, the application of a small portion of customs revenue earned at the ports which local interests help to create is more than justified by the benefits that accrue to the United States government. As to the third alternative, a source of funding to support a revenue bond issue that would keep the Port competitive is a direct derivative of the other two.

Of course, once again we would not expect to be responsible for any greater cost-share than is finally enacted into law by the Congress and the President. We also expect that any oral or written representations of our commitment to cost-share will include the qualifiers we have placed upon our agreement.

I greatly appreciate your personal interest in our project and in the subject of proper port development in general. We are aware of the pressing problems you are facing and are anxious to assist in any way that we can.

Most sincerely,

Melvin Shore
Port Director

STATEMENT OF OCEANSIDE HARBOR, CALIF.

EXPANSION NAVIGATION STUDY

The Oceanside Small Craft Harbor District urges your support for the continuation of funding for completion of the Oceanside Harbor Expansion Navigation Study in FY 85/86. This project is desperately needed to provide protection from surge within the harbor and to make the harbor a more financially viable operation.

Surge-generated waves in the harbor frequently exceed the 1.5 foot standard (surge has reached heights of six to eight feet) suggested by the Waterways Experiment Station. Since 1963, there have been 134 boating accidents, with 47 major injuries and nine deaths in the harbor entrance. The benefits gained from preventing damages (estimated vessel damage alone $942,638) and loss of lives caused by wave action in the harbor far exceed the cost of this project.

Harbor expansion would help to alleviate some of the demand for additional harbor facilities in Southern California. The harbor expansion design plan has a benefit-to-cost ratio of 2.6 tc 1, and its National Economic Development benefits could be expected to be even greater, as it would prevent inner harbor surge damages.

We respectfully request your approval of the recommendation of $105,000 for the completion of the Navigation Study.

MAINTENANCE DREDGING

The Oceanside Small Craft Harbor District urges your support of funding for maintenance dredging of the Oceanside Harbor entrance. This project is required to elevate inter-harbor surge generated from shoaling at the harbor entrance and in preparation for the testing/operation of the Oceanside Experimental Sand Bypass System.

Small craft harbors such as ours (29 commercial vessels and 886 recreational boating vessels) rely heavily upon Federal support for maintenance dredging. I understand that the Administration and Congress are attempting to agree upon a Federal cost sharing policy. However, unless the cost sharing issue is resolved in a fair and equitable manner, many of the harbors of refuge which cannot support their dredging requirements will be jeopardized.

I urge your support for continued Federal funding of maintenance dredging projects for small craft harbors and harbors of refuge.

Los Angeles County Shoreline Erosion Control

Statement of Department of Beaches and Harbors, Los Angeles County

The Board of Supervisors of the County of Los Angeles respectfully requests the serious consideration of the Congress of the United States for several projects urgently required to preserve and restore a vital and precious asset, the 75 mile shoreline of Los Angeles County.

During the winter storms of 1983 a combination of unusually high tides and strong winds caused extensive damage to the Los Angeles County coast. In the past two years the County has worked diligently to restore our beaches to their pre-storm condition.

While the beaches may appear to be significantly restored, they continue to be extremely vulnerable to future storms. Healthy beaches are necessary, natural buffers to protect public facilities from the unpredictable forces of the ocean. Because Los Angeles County has one of the most heavily urbanized and developed shorelines in the country, it is extremely important to fund and complete the studies requested below in order to help prevent future damage to heavy public investments in shoreline facilities.

For several years we have also requested funding for continuation of a federal survey of the North Coast of Los Angeles County to determine feasible sites for construction of small craft berthing facilities and harbors of refuge. A major urban development adjacent to and impacting upon the federal channel in Marina del Rey has been approved in the local coastal zone management plan, thus giving this study a high priority.

California Storm and Tidal Wave Study (Approximate Cost: $1,500,000)

The California Storm and Tidal Wave Study is presently examining the coast from the Mexican border north to Malibu in Los Angeles County to document changes in the shoreline and compile a technical data base quantifying these changes. This data base will provide information necessary for decisions regarding the restoration and maintenance of the shoreline.

Funding should be increased to $1,500,000 in fiscal year 1986 to accelerate data collection analysis, findings and recommendations from the U.S. Army Corps of Engineers.

North Coast of Los Angeles County Navigational Survey and Study (Approximate Cost $250,000)

Every year there is a growing demand for small craft harbor facilities in the United States, and nowhere is the demand more acute than in the Los Angeles metropolitan area.

The Marina del Rey Small Craft Harbor, a joint Federal/County project, has been greatly successful since its inception. Over $4.6 million has been expended by the Federal government since the project was first authorized in 1954. Matching funds from the State and County have topped $19 million, and the private section has invested over $175 million in a great variety of public facilities. Both government agencies and the private sector alike have realized a substantial financial return from Marina del Rey.

A recently approved Coastal Zone Management Plan has identified a site adjacent to the Marina del Rey Small Craft Harbor for a new boat basin connecting with the existing navigation channel. A navigation study costing $85,000 is urgently needed for this

area which is possibly the last significant opportunity to provide small craft facilities on the Los Angeles County coast.

Additionally, the City of Santa Monica has created a Santa Monica Pier Restoration Corporation to formulate plans for the restoration of their famous pier, severely damaged in the 1982-83 storms. An important part of the pier redevelopment involves the reestablishment of a breakwater. Therefore, the City of Santa Monica is interested in having the Corps of Engineers study the feasibility of rebuilding the breakwater, which could not only protect the new pier but also provide for the reestablishment of a small craft mooring area. This study would cost approximately $165,000.

Point Mugu to San Pedro Breakwater (Approximate Cost: $300,000)

Unusually strong winter storms in 1982-83 caused extensive damage to the Los Angeles County shoreline. The normal storm track was altered by the effects of the El Nino phenomena and many strong storms directly hit the California coast. These storms coupled with unusually high tides caused widespread damage to beaches and shoreline facilities.

While much of the sand has returned to the County's beaches, they remain vulnerable to future storms without proper shore protection. This feasibility study should be funded in order to help determine the most effective methods of shoreline protection at those points within the Santa Monica Bay and San Pedro compartments which are most vulnerable to future storm attack.

Marina del Rey Channel Dredging (Approximate Cost: $1,800,000)

This project is needed to provide for continued safe navigation in the Marina del Rey entrance channel. A recently completed engineering study has determined that sand deposits or shoaling are continually reducing the width of the boating lanes in the entrance channel, and sand deposits will eventually result in the harbor entrance being blocked.

Every year there are growing demands and shrinking resources, making the allocation of these resources a difficult task. I trust your Committee will recognize the high priority associated with the projects discussed in this letter, particularly by the eight million citizens of Los Angeles County and the countless visitors who come to Los Angeles to enjoy the "California" lifestyle at our beaches and harbors.

STATEMENT OF VENTURA (CALIF.) PORT DISTRICT

Ventura Harbor is located along the Southern California coastline in the City of San Buenaventura, some 30 miles downcoast from Santa Barbara, and approximately 60 miles northwest of the City of Los Angeles. Ventura Harbor became operational in 1963, and it soon became evident that the Harbor was plagued with a serious entrance problem. In May, 1968, the Ventura Harbor became a Federally approved project committing the U. S. Army Corps of Engineers to provide maintenance dredging and a solution to the entrance problem. A detached breakwater and sand trap area completed by the Corps of Engineers in 1972 alleviated some of the more damaging difficulties but continuing navigational problems persisted. Additionally, the need for annual maintenance dredging continued, and the Corps of Engineers and the Ventura Port District have conducted maintenance dredging of the Harbor entrance within the limits of their jurisdiction from 1968 through the present time.

In recent years an aggressive development program has resulted in many new facilities, and others that are either under construction or are scheduled for start in the very near future. These include an extensive commercial facility, primarily oriented to the commercial fishing industry and the servicing of the offshore oil industry. The total investment for these improvements is approximately $30 million, with $1,300,000 being funded by the Economic Development Agency. In addition, the headquarters for the Channel Islands National Park has been completed, and large numbers of the public are enjoying the displays and programs of the National Park Service. A 225 room resort hotel complex was completed in 1984 at a cost of approximately $27 million, and a second 300 room to 450 room hotel and conference center will begin construction within eighteen months. All of the operations of the Harbor, particularly those related to commercial fishing and the support boats for the oil industry, are highly dependent upon a navigationally adequate entrance to the Harbor. It is therefore respectfully requested that the Congress support the Army Corps of Engineers FY86 Civil Works Budget request of $1,640,000 for the maintenance dredging of the Ventura Harbor entrance channel. The area of Corps of Engineers responsibility is illustrated in Photo No. 1.

II

The U. S. Army Corps of Engineers is presently completing the reconnaissance phase of an authorized review study of the continuing navigational problems associated with the Ventura Harbor entrance. Photo No. 2 illustrates the study area. The design deficiencies associated with the existing federal improvements at the Harbor entrance result in the periodic shoaling of the entrance channel which can in extreme instances lead to the complete closure of the Harbor, but much more regularly causes the development of dangerous wave conditions during the winter storm months. This situation is a hazard to navigation which limits Harbor growth and development, reduces commerce, increases maintenance costs, and disrupts the local environment.

The Army Corps of Engineers FY86 Civil Works Budget Request includes $100,000 for the initiation of the feasibility phase of this ongoing navigation study. The Ventura Port District is of course pleased that the Corps of Engineers is

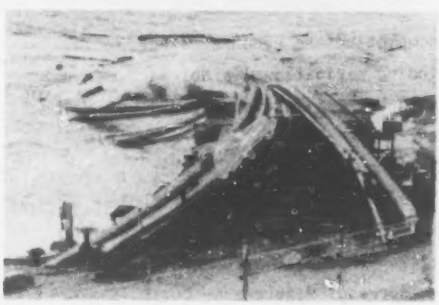
committed to moving forward with identifying the remedial measures necessary to correct the navigational problems associated with the federal improvements at the Harbor entrance. However, the Port District's financial participation in the cost of the feasibility study would be a severe hardship in view of the District's limited monetary resources and would be inappropriate since the study is necessitated by the design deficiencies associated with the 1972 federal improvements. It is therefore requested that the Congress eliminate the provision for local cost participation and include $200,000 in the Corps of Engineers FY86 Civil Works Budget for the feasibility phase of the ongoing Ventura Harbor Entrance Channel Navigation study.

STATEMENT OF PORT OF SAN LUIS, CALIF.

As you know, we have suffered 30 MILLION DOLLARS in STORM DAMAGE, replacement costs at PORT SAN LUIS. Primarliy because of inadequate southerly protection.

With the help of YOUR COMMITTEE and our Senators and Congressmen, $600,000 was appropriated for the PORT SAN LUIS AUTHORIZED PROJECT. Due to "slippage", these funds were not made available. Last fall we came to D.C. and convinced O.M.B. and the ARMY that we had a worthy project. $150,000 was released and the Corps have started their study.

We request that $450,000 be allocated to permit the Corps to complete the PORT SAN LUIS AUTHORIZED Breakwater Study.



PORT OF HUENEME HARBOR NAVIGATION PROJECT

STATEMENT OF PORT OF HUENEME, CALIF.

SUPPLEMENT TO TESTIMONY OFFERED BY OXNARD HARBOR DISTRICT COMMISSIONER BOB H. JENNINGS BEFORE THE SENATE SUB-COMMITTEE ON ENERGY AND WATER DEVELOPMENT ON THURSDAY, MARCH 28, 1985

BACKGROUND:

A navigation project for the harbor known as the Port of Hueneme, California was authorized by the River and Harbors Act of 1968, Section 101, Public Law 90-483 as shown in House Document 362, 90th Congress, 2nd Session. This project involved the widening of the commercial waterway known as Channel A and deepening the entire harbor basin and Channel A areas from a depth of -32 feet mean lower low water (MLLW) to a depth of -36 feet MLLW. The entire navigation project was to be accomplished in three phases in accordance with Design Memorandum No. 1, General Design of the Port of Hueneme Harbor prepared by the U.S. Army Corps of Engineers in early 1974.

Phases I and II were completed in 1972 and 1975 respectively. Phase III was deferred pending demonstration of need.

Because of increased tonnage and traffic developed at the port since 1975 the need to undertake and complete Phase III of this navigation project has become extremely critical. As an example of the vessel traffic and tonnage shown in the attached Exhibit I, it clearly depicts this growth. In fiscal year 1975 there were a total of 75 deep draft vessels which called the port. A total of 79,872 revenue tons of general break bulk cargoes were accommodated at the port. Substantial volumes of low sulfur fuel oil used by the Southern California Edison Company (SCE) at

its generating station at Ormond Beach comprised the major commodity. The SCE Company resorted to natural gas in late 1981 and this commodity has not been imported since that time but very well could be should oil prices decrease. However for calendar year 1984, the latest reporting figure, a total of 266 deep draft vessels called the commercial port. Over 560,000 revenue tons of general break bulk cargo were accommodated over the commercial port facilities.

In addition to the deep draft vessel traffic, there are presently in excess of 45 offshore oil supply vessels home based at the commercial port. These vessels service the offshore oil platforms situated in the Santa Barbara Channel area and require a multitude of services offered at the commercial port.

The acquisition of Wharf No. 2 and 19.8 acres of land from the U.S. Navy in October 1984 coupled with the growing commercial port business makes the extension of Wharf No. 2 more pressing than ever. The Oxnard Harbor District Board of Harbor Commissioners on March 11, 1985 voted unanimously to adopt Resolution No. 577 urging the allocation of federal funds to accomplish the Phase III project. A copy of this resolution is attached as Exhibit I.

The extension of Wharf No. 2 by 700 lineal feet will enable the Oxnard Harbor District to accommodate additional break bulk cargo business such as paper products, steel and lumber. The increase in containerized cargo at the Ports of Los Angeles and Long Beach makes it necessary for those ports to recycle their port facilities into modern container handling facilities. This of course makes the Port of Hueneme attractive to break bulk cargo shippers since no delays are experienced and a viable longshore work force is available to meet the port's needs.

The Wharf No. 2 extension project is expected to commence late 1985. The initial phase of work will involve the dredging of 260,000 cubic yards of material within Channel A. The federal portion of the dredging costs is estimated at $1,800,000 while the local sponsor (Oxnard Harbor District) will contribute approximately $855,000.

The costs of wharf construction and required warehouse facilities are expected to run over $13,000,000 and are to be financed by the Oxnard Harbor District utilizing revenue bonds to be sold late 1985. The improvements made by the Oxnard Harbor District will benefit the local economy in terms of jobs, payroll and other relates spinoffs. These port improvements will also benefit the U.S. Navy in times of national emergencies since an expanded port creates additional capabilities in terms of waterfront facilities and a viable and well trained workforce.

It is essential therefore that the federal share of funding for financing Phase III of the Port of Hueneme Harbor Navigation Project be included in the President's budget for fiscal year 1986. The Oxnard Harbor District Board of Harbor Commissioners respectfully urge that $2,000,000 be included in the budget for fiscal year 1986 in order to complete a most important harbor expansion project.

RESOLUTION OF OXNARD HARBOR BOARD OF HARBOR COMMISSIONERS, CALIFORNIA

WHEREAS, a navigation project for the deep water Port of Hueneme, California was authorized by the Rivers & Harbors Act of 1968, Section 101, Public Law 90-483 as shown in House Document 362, 90th Congress, 2nd Session; and

WHEREAS, the Oxnard Harbor District expended the proceeds of a $4.9 million general obligation bond issue to complete its harbor expansion program in 1972, known as Phase I of the Port of Hueneme Navigation Project; and

WHEREAS, in 1975 the United States Government provided $805,000 to complete Phase II of the Port of Hueneme Navigation Project by deepening the harbor basin and channel A waterway to a depth of -36 mean lower low water; and

WHEREAS, the need has been demonstrated to complete the final phase of the Port of Hueneme navigation project known as Phase III; and

WHEREAS, completion of Phase III of this navigation project will result in locally financed improvements to the port complex totalling approximately $10 million; and

WHEREAS, the federal portion of Phase III of the Port of Hueneme Navigation Project is anticipated to cost $2 million; and

WHEREAS, the continued growth of domestic and international commerce has shown a dramatic increase over the last five years; and

WHEREAS, a recent ocean cargo marketing survey shows a clear need for completion of Phase III of the Port of Hueneme navigation project; and

WHEREAS, the Board of Harbor Commissioners has recognized the overriding need to expand the port and has set in motion a plan to accomplish this important objective.

NOW, THEREFORE, BE IT RESOLVED that this Oxnard Harbor District Board of Harbor Commissioners goes on record of overwhelmingly supporting completion of Phase III of the Port of Hueneme Navigation Project; and

BE IT FURTHER RESOLVED that this Board of Harbor Commissioners respectfully urges the congress that the federal share of funding be allocated in fiscal year 1986 in order to complete the final phase of this very important navigation project.

ADOPTED, SIGNED and APPROVED this 11th day of March, 1985.

STATEMENT OF PORT OF STOCKTON, CALIF.

I am Alexander Krygsman, Port Director of the Port of Stockton, Stockton, California.

The Port of Stockton Deepwater Channel Deepening Project is an authorized project, presently under construction.

The Port of Stockton is primarily a bulk port that serves industry and agriculture in the San Joaquin Valley in California and the bulk imports and exports of the Western States, including the coal areas of these States.

The Port of Stockton recognized as far back as 1952 that deeper channels would be needed for the movements of bulk cargoes and requested the Corps of Engineers to deepen the channel in 1952. Coal, grain, fertilizers and many other bulk materials require deeper channels to serve the larger bulk carriers.

The Nation needs ports that can handle larger more economical and more fuel efficient vessels close to the production areas, both agricultural and industrial to conserve energy.

The Port of Stockton is such a port. Its channel is presently being deepened to keep it a viable port that can adequately serve our Nation and California's needs.

The Stockton Channel Deepening Project has overwhelming public support. The City of Stockton, San Joaquin County, neighboring cities and counties and the State of California support it.

This urgent project is now more than three-fourths done and it deserves continued funding to completion. We urge you to appropriate the same amount as contained in the proposed President's budget.

I wish to also state again for the record that the Port of Stockton is in support of deepening the Sacramento Channel.

The Port of Stockton also supports continued funding of programs to control the growth of water hyacinths in the San Joaquin/Sacramento Delta.

The attached material describes some of the work being done in connection with the Stockton Channel Deepening Project.

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West Newport Beach Harbor, Calif.

Statement of Costa Mesa, Calif.

I AM DONN HALL, COUNCILMAN FROM THE CITY OF COSTA MESA, ORANGE COUNTY, CALIFORNIA. MY PURPOSE HERE TODAY IS TO REQUEST YOUR SUPPORT AND RECOMMENDATION FOR AUTHORIZING $250,000 TO INITIATE AND COMPLETE THE NEEDED RECONNAISSANCE STUDY FOR THE WEST NEWPORT BEACH HARBOR. AS I HAVE ADDRESSED THIS BODY ON PRIOR OCCASIONS, I WILL NOT GO INTO THE DETAILS OF THE PROJECT TODAY, BUT RATHER APPRISE YOU OF THE CITY'S CONTINUED COMMITMENT TO THIS PROJECT. FURTHER, WE ARE PLEASED TO PROVIDE TO YOU THE RESULTS OF A RECENTLY COMPLETED ECONOMIC STUDY WHICH IS ON FILE WITH THE COMMITTEE AND DOCUMENTS BOTH THE DEMAND AND ECONOMIC FEASIBILITY OF THIS PROJECT.

THE WEST NEWPORT BEACH HARBOR PROJECT REPRESENTS A UNIQUE PUBLIC/PRIVATE PARTNERSHIP OPPORTUNITY DUE TO THE STRONG ECONOMIC CLIMATE IN ORANGE COUNTY AND THE DEMAND FOR MARINA RELATED FACILITIES. INDEPENDENT RESEARCH INDICATES THAT DEVELOPMENT OF THE HARBOR WOULD RESULT IN A 500 TO 700 MILLION DOLLAR INVESTMENT BY THE PRIVATE SECTOR IN THE PROJECT AREA DURING THE FIRST TEN YEARS OF OPERATION. PRIVATE INVESTMENT IN OFFICE, COMMERCIAL AND HOTEL DEVELOPMENT AS WELL AS AN ESTIMATED 3,000 RESIDENTIAL UNITS IS PROJECTED TO GENERATE 13.7 TO 18.5 MILLION DOLLARS IN LOCAL TAX REVENUES DURING THE SAME TIME. FINALLY, THE WEST NEWPORT BEACH HARBOR PROJECT WOULD CREATE 9,000 CONSTRUCTION RELATED JOBS AND 2200 PERMANENT POSITIONS YIELDING AN ANNUAL PAYROLL OF 33 MILLION DOLLARS.

CLEARLY THE APPROPRIATION BY THE FEDERAL GOVERNMENT OF $250,000 FOR THE RECONNAISSANCE STUDY REPRESENTS A MODEST INVESTMENT IN A PROJECT WHICH WILL YIELD SUBSTANTIAL TAX REVENUES TO ALL LEVELS OF GOVERNMENT AND PROVIDE THOUSANDS OF NEW JOBS. WE AT THE LOCAL LEVEL, HOWEVER, ARE CERTAINLY COGNIZANT OF CONGRESS' EFFORTS TO LIMIT FEDERAL SPENDING IN LIGHT OF THE DEFICIT SITUATION. FOR THIS REASON AND ON THE BASIS OF OUR CONFIDENCE IN THE VIABILITY OF THIS PROJECT, WE WOULD REQUEST THAT IF THIS APPROPRIATION IS NOT AUTHORIZED THAT YOU GRANT CONSIDERATION FOR THE CORPS OF ENGINEERS RECONNAISSANCE STUDY TO BE FINANCED THROUGH LOCAL SOURCES.

I WOULD LIKE TO THANK YOU FOR THIS OPPORTUNITY TO ADDRESS THE COMMITTEE AND REQUEST YOUR CAREFUL CONSIDERATION OF THIS PROPOSAL.

STATEMENT OF PORT OF OAKLAND, CALIF.

The Port of Oakland is an independent department of the city government and is entirely financially self-supporting. The Port's development of marine terminals and the private sector activities that take place because of those developments account for over 12,000 direct jobs.

The Port of Oakland, located on the mainland side of San Francisco Bay, has made optimum use of its strategic location and natural setting to interface its extensive and modern marine terminal facilities with the facilities of other modes of transportation. Close to the Port are interstate highways, freeways, railroad and trucking terminals. The Port is served by two major railroads, a network of six main highways, 600 trucking companies and some 50 ocean shipping lines.

With the advent of containerized shipping in international trade in the late 1960's, the importance of convenient transfer between transport modes became critically important. Because of its geographical location, progressive management and inland transportation network, Oakland has developed into a major world containerport.

Oakland marine terminals complex consists of 28 berths, of which 18 are modern facilities dedicated to container operations and these facilities represent a local investment of over $165 million in public funds. All of the terminals are presently accessed by an historical federal ship channel system consisting of the Bar Channel, the Outer Harbor Channel, and the Inner Harbor Channel. The channels are currently improved to a depth of -35 feet. The depth was designed in the 1940's before the introduction of containerization and when the vessels were drawing about 25-feet draft of water. Today, four decades later, the containerships calling at Oakland are longer, wider and of deeper draft, drawing 39 feet of water. A minimum of 42 feet of water depth is needed to permit these modern ships to navigate safely into and out of port. All of the major global container lines as well as the U.S. Flag lines of Sea-Land, American President Lines, U.S. Lines and Matson serving Oakland have updated or retrofitted their fleets to the newer fourth generation ships. The justifications are readily apparent. The larger fourth generation containerships provide the shipping lines a competitive edge due to the economy of their scale-of-operation. Such ships can deliver a container across the Pacific using only a third of the amount of fuel consumed by the earlier vessels.

The Port of Oakland foresaw this trend in vessel design and recognized that the federal channels serving Oakland would become inadequate with time. As early as 1971, the Port of Oakland formally requested study of the channel situation. First to be addressed was the Oakland Outer Harbor. The Feasibility Report and Final Environmental Impact Statement (EIS) prepared by the Corps of Engineers have been completed. These reports have been approved by the Corps' Chief of Engineers' Office and a navigation improvement project was transmitted to Congress in January, 1979. The start of construction for the Oakland Outer Harbor was included into the Congressional appropriation proposals last year, and as we know, the proposals were not enacted in the waning moments of the 98th Session.

The companion project to the Outer Harbor improvements, the Oakland Inner Harbor Deep-Draft Navigation Project, was authorized for study by the Corps of Engineers in 1977. The completed Feasibility Studies and EIS have been forwarded to the Chief of Engineers in December, 1984, with favorable recommendation that the project proceed to design and construction after its review by the Secretary of the Army, the Office of Management and Budget and the Congress.

The Outer Harbor Channel Project's General Design Memorandum is completed. We urge the appropriation of $6.0 million for FY 1986 to complete contract plans and specifications and initiate construction start. Similarly, we urge the appropriation for FY 1986 of $635,000 to complete engineering and design for the Oakland Inner Harbor Project. We cannot put off deepening the federal channel network any longer. Technology has caught up with us. The new deeper ships are here now and our current channels are lagging behind over 40 years in progress. They are simply inadequate, inefficient and unsafe.

To illustrate the importance of this appropriation, we wish to describe the Port of Oakland's impacts. In 1984, the Port of Oakland handled almost 13 million revenue tons of general cargoes -- 90% or almost 12 million tons of which were containerized cargoes. In 1984, the Port of Oakland accounted for almost 95% of all container cargoes passing through the Golden Gate. The historical export orientation of the Port has continued with the development of containerization. Oakland is the leading export port on the Pacific Coast and is the last port of call for many lines. During a typical month, over 40 container vessels sail directly from Oakland to overseas destinations.

The Port of Oakland, whose total value of export general cargo is estimated to approximate $5.3 billion, contributes positively and significantly to the United States balance of trade. We further estimate that this port generates almost $300 million in customs revenues and taxes paid to the U.S. treasury. Adequate channel depths are essential to the Port's continued ability to contribute positively to the nation's economic and financial well-being, as well as to our local community.

As a last port-of-call, container vessels sailing from Oakland with a wide variety of manufactured and agricultural exports, attempt to load to full cargo capacity and with maximum fuel. By nature, exports from the United States tend to have a greater density than lighter weight, higher cube import cargoes. New containership designs, coupled with the desirability of maximum loading, require that channel depths of 42 feet at mean lower low water to be provided as an absolute minimum. The high cost of modern containership operations does not permit vessels to wait for high tide conditions. Sailing delays necessitate increased speed and high fuel consumption at sea if schedules are to be maintained.

Details concerning the status of the Oakland Harbor Channel system are as follows:

The Port of Oakland terminal facilities are served by two major federal channels -- the Outer Harbor Channel and the Inner Harbor Channel -- both of which are now at 35' depth MLLW.

The Oakland Outer Harbor Channel is the main waterway to our Outer Harbor Terminal, Seventh Street Terminal, and the Army Military Ocean Terminal. The federal project will also include deepening the Entrance Bar Channel which also serves the Naval Supply Center. Almost 370 acres of the Port's marine terminal area are tributary to this channel. Of Oakland's annual 13 million revenue tons of containerized cargoes, some 9 million revenue tons passed through the Outer Harbor Channel. Two major U.S. flag carriers -- Sea-Land Service and Matson Navigation -- berth along this water route.

The present Outer Harbor Channel depth of -35' MLLW was established in 1945. In 1972, the Corps of Engineers was authorized to conduct an investigation of improving this channel to keep pace with the liner vessel design. The Final Feasibility Report was completed by the Army in February 1977 and recommended three basic improvements to the existing channels:

1. Deepen channel to -42 feet MLLW.
2. Realign channel dog-leg for safety factors.
3. Develop new turning basin.

The project has a favorable benefit/cost ratio of 2.7 to 1.0. Total federal project cost is $22.0 million. The average annual cost to improve the channel has been calculated to be only about one percent (1%) of annual duties and tax revenues derived from the Port of Oakland's shipping activities, which I believe is solid justification for the project.

The other portion of the Port's federal channel system is known as the Inner Harbor Channel. The last federal improvement to this channel was initiated in 1960, and in 1975, the channel was deepened from -30 feet MLLW to its present -35 MLLW feet. The width of the Inner Harbor Channel varies from 600 feet to 800 feet.

The present channel depth of -35 feet MLLW is insufficient to efficiently serve the new vessels using the modern container terminals developed along its shoreline. Present containerships are experiencing delays due to the inadequate channel depth and a newer generation of containerships.

The Inner Harbor Channel accounts for some 4 million revenue tons per year of containerized cargoes in Oakland. The Port of Oakland has 6 containership berths serviced by the Inner Harbor Channel. The Charles P. Howard Terminal, a new 50-acre container terminal constructed at a cost of $45 million was dedicated in October, 1982. Two U.S. Flag lines, American President Lines and United States Lines, have long-term commitments at their Inner Harbor Channel terminals.

The Corps of Engineers Final Feasibility Report and EIS completed in 1984 made the following findings:

1. A project to deepen the four-mile reach of the Oakland Inner Harbor Channel is both economically and ecologically feasible.
2. The project should include widening of the Bar Channel to the Oakland Harbor from its 800 feet width to 1000 feet width.
3. The recommended plan is to deepen the Inner Harbor Channel to -42 feet MLLW.

4. The project should include a 1200 foot diameter turning basin.
5. The benefit/cost ratio is determined to be a favorable 2.2 to 1.
6. Total federal project cost is calculated at $21.7 million.

If the Port of Oakland is to continue its role in serving the economic and national defense needs of the local community, the region and the nation, work on these channel improvements must begin and we respectfully request appropriations to carry this work forward.

Statement of Port of Los Angeles

Mr. Chairman, my name is Ezunial Burts, Executive Director of the Port of Los Angeles. I am proud to report to your Subcommittee that the Port of Los Angeles is continuing to keep pace with the dramatic growth in waterborne commerce which the country is experiencing, particularly as it relates to the Pacific-Rim countries. We currently have under way landside developement which will add more than 137 acres in cargo handling space, and we have seen the first draft of the Corps of Engineers study that projects our future land needs at 2600 acres for the year 2020 at the Ports of Los Angeles and Long Beach based on the Corps cargo projections.

I can further report to you that we are already beginning to see the benefits from the channel deepening project which was completed in April of 1983, following a total federal investment of $29.8 million and a corresponding local investment of $31.5 million.

Mr. Chairman, it was your Subcommittee that stood by us through those years of construction, and I think that we can both be proud of the finished results. In 1984, the total metric revenue tonnage was 37.5 million, and we project that in 1985 we will see a 15 percent increase in total metric revenue tons.

This increase in business has meant more jobs, and, in terms of customs revenues, total district collections went up in FY 1984 by 42 percent, for a total of $2.1 billion. In short, the economic success story of our Port is real and one that has benefited many.

Nineteen years ago, at the direction of Congress, the Corps of Engineers undertook a comprehensive study of the future cargo handling needs of the trade projected to pass through the Ports of Long Beach and Los Angeles. This study, which has come to be known as the "2020 study," was jointly funded by the Corps of Engineers and the Ports of Long Beach and Los Angeles, with the total local contribution amounting to approximately $370,000. This was matched by more than $6.6 million in Federal funds -- funds appropriated by your Subcommittee over a period of 14 years. With the virtual completion of this "2020 Master Plan study," we have reached a very critical period in the development cycle of our Port, and if we are going to continue our partnership with the Federal Government, it is important that we not retreat from undertaking the job that lies ahead. In fact, the Corps of Engineers will be issuing its final draft of the "2020 study" later this year, and, based on the preliminary draft report, we know that the final report will recommend that the next step is to do a site specific project study. This study would cost $1.2 million in fiscal year 1986, and it is proposed that this work should start early next year.

It is funding for this site specific project study that we are asking your Subcommittee to fund in FY 1986.

Closely associated with this site specific project study is the tidal circulation and harbor resonance study for which we have requested funding in the past. In fact, your Subcommittee provided some funding for this study in FY 1982, but since that time there has been only minimum funding for this five-year

effort. The lack of continuity in funding this essential study has been a source of great frustration to us, and all the more so when you consider the pressure there has been during the interim years to close down the Vicksburg Model, which is so vital to the completion of this study. While the Corps of Engineers' Fiscal Year 1986 budget does include $135,000 to maintain the model, it does not include any funding for the tidal and resonance study.

It is our estimate that the study could be completed in four years if funding were made available at the level of $1.2 million during the first three years and $700,000 in the fourth and final year.

Therefore, I would request your Subcommittee to give favorable consideration to an appropriation of $1.2 million for this project in FY 1986. I can assure you the project is essential to the future development of the Port of Los Angeles.

Mr. Chairman, perhaps it would be helpful to the Subcommittee if I were to explain the important aspects of these two very different studies for which we have proposed the identical amounts be appropriated in FY 1986.

Let me first discuss the study that I will describe as a follow-on to the "2020 study." It is what I have referred to today as "site specific project study," and includes actual model testing and computerized ship navigation simulation. This study will go into a more detailed study of the feasibility of the site specific project and refine the actual limits of dredging and landfill so an accurate cost estimate can be prepared.

This study will define the limits of a future Federal project and the amount of local participation required. The local port authorities are financially capable of participating in this project as was done in the harbor deepening project referred to earlier.

Second is the tidal and resonance study, which is not a new subject to this Subcommittee. Nevertheless, let me describe how important it is for us to simulate the wave conditions outside the breakwater and to understand the impact of the wave conditions on ship berths in the harbor. Without such a study, we would not be able to determine the ultimate land configuration and berthing locations. It is also essential to model the effects on circulation in the harbor to assure that no adverse water conditions are created.

You might ask us why the hurry in completing this study after a delay of four years. I must say, Mr. Chairman, that our port is not the only one that has seen the momentum in its orderly development efforts delayed in recent years. The entire issue of what the Federal role should be in port development has been under intense debate. For the last five years, we have hoped that there would be a new commitment made in the nature of a comprehensive water resources bill, but each year our hopes have been dashed.

Once again, it is our hope that Congress will resolve this issue. While we are prepared to abide by that decision, we cannot easily endure continued uncertainty as to the nature and scope of that commitment. Such uncertainty undermines our task of maintaining and, indeed, expanding, the national assets which we have the responsibility to manage.

There is another issue, Mr. Chairman, that I must raise with the Subcommittee, and that is the need for $2.5 million that the Corps of Engineers estimates it will take in FY 1986 to repair the outer harbor breakwater that was damaged in March 1983. It would be helpful if the money could be made available in FY 1985, but if that is not possible, it is certainly needed in FY 1986.

In conclusion, Mr. Chairman, I urge the Subcommittee to continue its fine tradition of providing the necessary Federal resources, within the authority of the law, to maintain and expand our Nation's port system. As an integral part of that system, I think our requests are reasonable and justified.

Thank you for the opportunity to address your Subcommittee.

STATEMENT OF LONG BEACH, CALIF.

I am E. D. Allen, Director of Engineering, Design and Development for the Port of Long Beach, California. I have been authorized by the Board of Harbor Commissioners of the City of Long Beach to represent the Port of Long Beach in regard to appropriations for the Los Angeles-Long Beach Harbors Study, the Los Angeles and Long Beach Harbors Model Study programs, and for remedial maintenance dredging in the mouth of the Los Angeles River.

The Los Angeles-Long Beach Harbors Review Report for future channels and landfill development, which has been in process since 1964 by the U. S. Army Corps of Engineers, is scheduled for completion in fiscal year 1985. This report demonstrates the need for the development of 2,600 acres of new landfill and related navigation channels if the harbors are to keep up with the economic needs of the nation. With the completion of this preliminary report, this study will then move into the next phase, which is the development of a continuing planning and engineering report, including physical and numerical model testing and a computerized ship navigation safety study. It is therefore urged that the Committee approve an appropriation of $1,000,000 to continue this study.

The Water Resources Development Act of 1976, Section 123, authorized the Chief of Engineers to operate and maintain the Los Angeles-Long Beach Harbor Hydraulic Model at the U.S. Army Waterways Experiment Station in Vicksburg, Mississippi, as part of the Los Angeles and Long Beach Harbors Model Study. In the President's budget for fiscal year 1986, $135,000 has been included to maintain that model. However, as a portion of the Los Angeles and Long Beach Harbors Model Study, the Corps of Engineers has initiated a study of tidal circulation, wave energy, and ship motion in the San Pedro Bay area. The Port of Long Beach long-term plans for deeper channels (to -82 feet) and companion landfills to accommodate large bulk carriers for much needed international trade, is contingent on obtaining such hydraulic data and subsequent model testing in a timely manner. The President's budget for fiscal year 1985 does not include O & M funding needed to acquire, place, and maintain instrumentation for this program by the Waterways Experiment Station. It is currently estimated that an appropriation of $1,133,000 would fund this much-needed continued information-gathering program for fiscal year 1986. Congress is

therefore respectfully requested to appropriate this $1,133,000, plus the $135,000 for model maintenance, for a total appropriation of $1,268,000 for fiscal year 1986. It is our understanding that the Corps of Engineers is capable of continuing this program if funded.

The modernization and expansion program by the Port of Long Beach is estimated to cost in excess of $200,000,000 of local funds for the decade of the 1980's and a similar or greater growth in the 1990's. The Port has essentially utilized all existing available land areas. The Port has a tanker terminal with a water depth of -76 feet which is capable of berthing 285,000 DWT ships. But existing depth of the channel serving this berth is only -60 feet.

The deepening of this channel and subsequent developments can be carried out only if additional landfills and berths can be provided. Design of these developments is dependent on data obtainable from hydraulic monitoring of San Pedro Bay and hydraulic model testing, together with the results of the Los Angeles-Long Beach Harbors Study.

The Port of Long Beach also concurs with and supports the recommendation of the California Marine Affairs and Navigation Conference and the City of Long Beach on federal funding for remedial maintenance dredging to remove accumulated flood-deposited silt in the mouth of the Los Angeles River. These silt deposits create serious restrictions and hazards to commercial and recreational boating activity in and adjacent to the Long Beach Harbor District. In addition, the Port recommends that these silt deposits be removed, preferably on an annual basis, or at least on a biennial basis as a scheduled item of work. The dredged material should be used for filling scoured edges of the river channel, replacement of the sand on the beaches in Long Beach down the coast from the Los Angeles River, or creation of new landfills in adjacent areas. The replacement is necessary because of the interruption of the normal littoral processes by the flood control channel and the influence of the federal breakwater on normal wave action, which create a reduction in sand movement and serious beach erosion under certain storm conditions. It is estimated that the annual rate of siltation is approximately 200,000 to 300,000 cubic yards and is influenced by operational decisions at the Corps of Engineers' Hansen Dam located at the headwaters of the river. It is imperative,

in our opinion, that a more assured long-range remedy be found for the Los Angeles River mouth if navigational utility is to be maintained. House Document 843, 76th Congress, 3rd Session, delegated this maintenance responsibility to the Corps, but developments in the mouth of the River have rendered the authorizations set forth in this document obsolete. Therefore, it is recommended that the existing design elevation be lowered to a depth of -30 ft. and that a scheduled program be established to monitor water depths in the River to insure an operational depth of -20 ft. These actions will allow the Corps to initiate maintenance activities in a more timely and economically feasible manner before the channel becomes completely closed to navigation on one side and excessive scour occurs on the other side. The City and the Port believe that these modifications, as well as an explicit annual maintenance dredging and beach replenishment project would provide such a long-range solution to the siltation problem from the Los Angeles River. It is currently estimated that an appropriation of $1,000,000 would fund this most essential remedial project on an annual basis. Congress is therefore respectfully requested to appropriate this $1,000,000.

Attached hereto is Resolution No. HD 1300, adopted by the Board of Harbor Commissioners of the City of Long Beach on February 4, 1985, which contains data relating to the background of the Los Angeles-Long Beach Harbors Study, hydraulic modeling, and other related matters, and which stresses the need for federal assistance in developing economic, technical, and environmental background information essential to the design and permitting of Port facilities vital to regional and national interests.

Agencies benefiting from these projects in San Pedro Bay include, but are not limited to, the City of Long Beach, the Ports of Long Beach and Los Angeles, the County of Los Angeles, the State of California, and the United States Navy and Coast Guard, plus various state and federal environmental agencies. Thank you for permitting me the privilege of this presentation.

RESOLUTION NO. HD-1300

A RESOLUTION OF THE BOARD OF HARBOR COMMISSIONERS OF THE CITY OF LONG BEACH, CALIFORNIA, REQUESTING THE CONGRESS OF THE UNITED STATES TO APPROPRIATE FUNDS TO CONTINUE THE LOS ANGELES-LONG BEACH HARBORS STUDY, TO CONTINUE THE LOS ANGELES AND LONG BEACH HARBORS MODEL STUDY PROGRAMS, BOTH RELATING TO IMPROVEMENTS IN SAN PEDRO BAY, AND FOR REMEDIAL MAINTENANCE DREDGING IN THE MOUTH OF THE LOS ANGELES RIVER, ALL BY THE UNITED STATES ARMY, CORPS OF ENGINEERS, AND MAKING A DETERMINATION RELATING THERETO.

WHEREAS, the Ports of Long Beach and Los Angeles in San Pedro Bay, California, are two of a limited number of sites on the West Coast of the United States which possess the potential for deep water ports as recommended in the West Coast Deep Water Port Facility Study conducted by the United State Army, Corps of Engineers; and

WHEREAS, the Ports of Long Beach and Los Angeles have a record of both physical and fiscal growth to the extent that together the two are presently handling over 93 million metric tons of cargo annually (on a fiscal year basis), which cargo is valued at over 35 billion dollars; and

WHEREAS, the growth and activity of the Ports of Long Beach and Los Angeles have a significant regional and national economic effect; and

WHEREAS, over 2.0 billion dollars in federal revenues are derived annually through United States Customs duties on foreign imports in this Customs District; and

WHEREAS, both Ports are now, and are increasingly becoming, hard-pressed to provide facilities to meet the needs

of the shipping industry, and to that end are conducting extensive studies, in conjunction with federal studies, to determine navigational, transportation, and environmental requirements necessary to provide economic and adequate surge-free berthing and cargo-handling facilities; and

WHEREAS, all existing land in the Port of Long Beach which can be developed for shipping operations has been utilized and to meet the needs of the following decade, the design, permitting and construction of new lands must commence immediately; and

WHEREAS, continuation of the studies currently underway by the Corps of Engineers, consisting of the Los Angeles-Long Beach Harbors Study originally requested by the Committees on Public Works of both the House and the Senate, and the Los Angeles and Long Beach Harbors Model Study programs, including maintenance and operation of the San Pedro Bay Hydraulic Model at Vicksburg, Mississippi, as authorized by Section 123 of the Water Resources Development Act of 1976, is urgently needed for use in the design and permitting processes for future landfills for Port Development; and

WHEREAS, it is necessary, as part of the Los Angeles and Long Beach Harbors Model Study, to obtain long-term data on the hydraulic regime in San Pedro Bay, which activity consists of a monitoring program using self-contained recording instruments to determine currents and energy entering the Bay in order to augment earlier monitoring and to verify specific needs for hydraulic model testing to assure tidal flushing and surge-free berthing; and

WHEREAS, the Los Angeles River is the largest of numerous flood-control channels constructed and maintained jointly by the Los Angeles County Flood Control District and the United States Army, Corps of Engineers, and silt deposit from heavy storm runoff in recent years accumulating in the mouth of the Los Angeles River between the City and the Port of Long Beach

constitutes a restriction and hazard to both commercial and recreational boating; and

WHEREAS, the Board of Harbor Commissioners of the City of Long Beach, as a properly constituted and financially responsible local agency, by its Resolution No. HD-890, adopted August 3, 1965, expressed its intent to enter into such agreements as may be reasonably required to further federal projects for the development and improvement of Long Beach and Los Angeles Harbors; and

WHEREAS, the Director of Port Planning of the City of Long Beach Harbor Department has determined, in a review of the applicability of the California Environmental Quality Act (CEQA) to this Resolution, that under the provisions of Sections 15301 and 15378 of the State Guidelines implementing CEQA, this Resolution is not subject to the requirements of CEQA;

NOW, THEREFORE, the Board of Harbor Commissioners of the City of Long Beach resolves as follows:

1. The Board of Harbor Commissioners hereby finds and determines that this Resolution is not subject to the provisions of the California Environmental Quality Act.

2. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army, Corps of Engineers, to continue the Los Angeles-Long Beach Harbors Study.

3. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army, Corps of Engineers, to maintain the San Pedro Bay Hydraulic Model at the Waterways Experiment Station at Vicksburg, Mississippi, as part of the Los Angeles and Long Beach Harbors Model Study.

4. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States

Army, Corps of Engineers, to continue the hydraulic monitoring program of San Pedro Bay to obtain prototype data essential to long-range planning and design, also as part of the Los Angeles and Long Beach Harbors Model Study.

5. That the Congress of the United States be, and is hereby, respectfully requested to appropriate simultaneously the funds necessary for the Chief of Engineers, United States Army, Corps of Engineers, in conjunction with the Los Angeles County Flood Control District, to engage in the necessary maintenance dredging at the mouth of the Los Angeles River to remove silt deposits which have accumulated at that location.

6. That the Executive Director of the Long Beach Harbor Department be, and he is hereby, directed to send copies of this Resolution to the United States Senators and to Members of the House of Representatives from California, with a letter requesting their assistance in presenting this Resolution before the proper Congressional committees.

7. That the Executive Director of the Long Beach Harbor Department be, and he is hereby, further directed to send copies of this Resolution to the President of the United States; the Director, Office of Management and Budget; the Secretary of the Army; the Chief of Engineers, the Board of Engineers for Rivers and Harbors, the Division Engineer-San Francisco, the District Engineer-Los Angeles, all of the United States Army, Corps of Engineers; and to such other interested persons as he may deem appropriate.

The Secretary of the Board shall certify to the passage of this Resolution by the Board of Harbor Commissioners of the City of Long Beach, shall cause the same to be posted in three (3) conspicuous places in the City of Long Beach, and shall cause a certified copy of this Resolution to be filed forthwith with the City Clerk of the City of Long Beach and it shall thereupon take effect.

I hereby certify that the foregoing Resolution was

adopted by the Board of Harbor Commissioners of the City of Long Beach at its meeting of February 4, 1985, by the following vote:

Ayes:	Commissioners	Langslet,Hauser,Wilson, DuVall,Gray
Noes:	Commissioners	None
Absent:	Commissioners	None
Not Voting:	Commissioners	None

Richard G. Wilson
Secretary

RESOLUTION NO. C- 23897

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LONG BEACH URGING THE CONGRESS OF THE UNITED STATES TO AUTHORIZE AND FUND THE ANNUAL DREDGING OF THE MOUTH OF THE LOS ANGELES RIVER

WHEREAS, the mouth of the Los Angeles River, which is the largest of the numerous flood control channels in Los Angeles County, is located within the city limits of the City of Long Beach; and

WHEREAS, due to heavy rainfall runoff, great quantities of silt and sediment are deposited at the mouth of the Los Angeles River and in the channel seaward thereof in Queensway Bay; and

WHEREAS, the annual rate of such siltation is approximately 200,000 to 300,000 cubic yards, and is influenced by operational decisions at the Corps of Engineers Hansen Dam situated at the headwaters of the Los Angeles River; and

WHEREAS, the City-owned Catalina Landing Facility, from which a private company operates daily scheduled passenger service to and from Catalina Island under a permit from the City, and the Golden Shore Small Boat Launching Facility which is owned

and operated by the City for the launching of small boats, are both located at the mouth of the Los Angeles River; and

WHEREAS, said silt deposits create substantial hazards and cause serious problems and significantly restrict, limit and hinder the use of the navigable waters at the mouth of the Los Angeles River for commercial and recreational boating activities, especially for commercial transportation between Long Beach and Catalina Island; and

WHEREAS, the shoaling about the piers of the Queensway Bridge created by the silt deposits may affect the structural integrity of said bridge; and

WHEREAS, the maintenance dredging of the mouth of the Los Angeles River and the basins and channel seaward thereof in Queensway Bay is necessary so that said navigable water areas and the adjacent facilities may continue to be used safely and without danger of loss of life and property; and

WHEREAS, the maintenance dredging of the mouth of the Los Angeles River to insure continuation of safe navigation is within the jurisdiction of the United States Army, Corps of Engineers, and

WHEREAS, the accumulated silt deposits in the mouth of said river should be removed on an annual basis as a scheduled item of work for the Corps of Engineers; and

WHEREAS, due to funding limitations, such maintenance dredging has only been performed on an occasional basis by the Federal Government and navigational dredging responsibilities have thus been unnecessarily shifted to local government;

NOW, THEREFORE, the City Council of the City of Long Beach resolves as follows:

Section 1. The Congress of the United States is urged to appropriate approximately $1,000,000 for the United States Army, Corps of Engineers, to perform the necessary maintenance dredging at the mouth of the Los Angeles River and

the basins and channel seaward thereof in Queensway Bay to remove deposits of silt and sediment which have accumulated at that location to lower the existing design elevation to a depth of minus thirty (30) feet mean low low water (MLLW).

Sec. 2. The Congress of the United States is requested to authorize and fund an annual maintenance dredging project for the mouth of the Los Angeles River by the Department of Army, Corps of Engineers in order to insure an operational depth of minus twenty (20) feet mean low low water (MLLW) and to provide a long range solution to this continuing situation and maintain navigational utility.

Sec. 3. The City Clerk is directed to send certified copies of this resolution to the United States Senators and the Members of the House of Representatives representing the Long Beach area; the Secretary of the Army; the Chief of Engineers of the Department of the Army; and to such other interested persons as may be deemed appropriate.

Sec. 4. The City Clerk shall certify to the passage of this resolution by the City Council of the City of Long Beach and it shall thereupon take effect.

I hereby certify that the foregoing resolution was adopted by the City Council of the City of Long Beach at its meeting of February 19, 1985, by the following vote:

Ayes: Councilmembers: Wilder, Edgerton, Hall, Clark, Wilson, Sato, Tuttle, Harwood, Kell.

Noes: Councilmembers: None.

Absent: Councilmembers: None.

Shelba Powell
City Clerk

CALIFORNIA WATER RESOURCE DEVELOPMENT PROJECTS

STATEMENT OF THE CALIFORNIA WATER COMMISSION

Mr. Chairman and members of the Committee: I am Dan Dooley, Chair of the California Water Commission, an official agency of the State of California. The Commission is composed of nine representative citizens from throughout the State who are charged by statute with representing State and local interests before this Committee. We have coordinated our presentation with representatives o local agencies, who I will introduce to you in a few minutes.

The California Water Commission is appreciative of the efforts of you and your Committee in supporting California for water resources appropriations over the years.

I am privileged to appear before you with the official recommendations of the State of California for fiscal year 1985-86 appropriations. I would like to speak first on a matter of significant importance, we feel, to both Federal and State intersts: the coordinated operation of the Federal Central Valley Project (CVP) and the State Water Project (SWP).

Federal State Coordinated Operations Agreement

The water of one project is physically indistinguishable from that of the other when mingled in the lower portion of the Sacramento River and Sacramento-San Joaquin Delta. Coordnation of CVP and SWP operations is necessary to attain the most effective use of available water resources and to assure that each project obtains its appropriate share of available water while bearing its appropriate share of obligations to protect the environment of the Delta.

The California Department of Water Resources (Department) and the U. S. Bureau of Reclamation (Bureau) have operated their respective projects pursuant to a Coordinated Operations Agreement, signed May 16, 1960, since the State Water Project became operational. Negotiations of operating criteria started in 1961 and resulted in a draft agreement dated May 13, 1971. This draft was superseded by another draft agreement dated December 22, 1982. In that agreement, the State and Federal governments agree to meet a specified set of water quality standards extracted from Decision 1485 of the California State Water Resources Control Board.

The negotiations were reopened and are continuing. The unresolved issue is the determination of the applicability to the United States of any water quality standards which may be developed by the California State Water Resources Control Board.

The California Water Commission feels it is time to lay to rest this issue and move ahead to other pressing problems. The moratorium on new water service contracts for the CVP needs to be lifted, and the State must move forward on programs to meet increasing water needs.

We have encouraged the Department and the Bureau to conclude negotiations and execute the Coordinated Operations Agreement. We will support Congressional approval of this agreement.

Cottonwood Creek

When we adopted our appropriations recommendations we were mindful of the need to help reduce the Federal Government deficit. We were also aware of several programs meriting special consideration for which we are recommending additional funding, provided the funds can be reprogramed within the total allocation in the President's Budget.

The Cottonwood Creek Project is one of the most important of these programs. Funding for continued participation of the U. S. Army Corps of Engineer's Cottonwood Creek Project in Tehama County is critical to the needs of flood control on Cottonwood Creek and along the Sacramento River. This Creek is the

only uncontrolled stream in the Sacramento Valley with sufficient water to meet increasing future water needs. Whether water costs will be within the SWP ability to pay needs to be analyzed and studied by the users. It is encouraging to note, however, that the most recent studies of the Project and its alternatives by the Corps and the State indicate a probable lower project cost than earlier estimated.

The Commission strongly recommends an appropriation of $500,000 for this investigation in F.Y. 1985-86 so that the Corps can work with the SWP contractors to resolve this issue as soon as possible.

Grass Valley Debris Dam

The Grass Valley Debris Dam (Buckhorn Mountain Dam) is another program meriting special consideration. Since construction of the Trinity Dam, as part of the Federal Central Valley Project, the flows in the Trinity River have been insufficient to transport sediments to the sea, thereby silting in the spawning gravels and resting pools for anadromous fish.

The Grass Valley Debris Dam was formulated by a federal-state-local Trinity River Basin Fish and Wildlife Task Force after several years of study. The Dam was authorized in 1984 following active support by the Secretary of the Interior, state and local interests. Costs of the dam are to be shared by Federal and State Governments. Now that the project is authorized, we think it is important that responsible government agencies follow through by providing for the funding and construction of the dam.

We are urging the Department and the Bureau to determine the funding requirements for F.Y. 85-86. We will advise you of our recommendation at the earliest possible date.

Recommendations for Reprograming of Funds

The Commission is also recommending that additional funds be reprogrammed into into several projects and investigations. These are other programs which merit special consideration for additional funding, provided the funds can be made available within the allocation in the President's F.Y. 1986 Budget. Following is our list of recommended projects:

Corps of Engineers

	President's Budget	Additional Funds Recommended thru Reprograming
Antelope Valley Streams	140,000	260,000
Los Angeles Drainage Area	370,000	130,000
Mojave River Dam	0	500,000
San Joaquin River Basin Kaweah River and Tule River Interims	110,000	420,000
Santa Ana River and Orange County-Interim II	0	150,000
Lower San Joaquin River and Tributaries	0	2,900,000
Wildcat and San Pablo Creeks	100,000	No specific amount

Bureau of Reclamation

Elsinore Valley Municipal Water District Loan	0	500,000

Support for the President's Budget

Corps of Engineers

The President's Budget will assure construction of several projects at a prudent rate. Some of these projects are Dry Creek (Warm Springs Lake), LACDA Rehabilitation, Lytle and Warm Creeks, Sweetwater River, Walnut Creek, Sacramento River Bank Protection, and Sacramento River-Chico Landing to Red Bluff.

The President's Budget provides reasonable funding for flood control investigations and design by the Corps for the Calleguas Creek, Guadalupe River, San Francisco Bay Shoreline-both the San Mateo and Northern Alameda Interim and the Santa Clara and Alameda Interim, San Luis Obispo County Streams, and Redbank and Fancher Creeks projects.

We support the funding in the President's Budget for the following new construction starts: Merced County Streams, San Luis Rey River, Fairfield Vicinity Streams, and Pajaro River-Uvas Carnadero. We also support the fundingin the President's Budget for Corps programs listed on the attached tabulation dated March 14, 1985, and request favorable consideration by the Congress for each of these projects.

Bureau of Reclamation

The President's Budget continues funding at prudent levels for the construction of the Sacramento River and San Felipe Divisions of the CVP, and the Colorado River Salinity Control Project. The Colorado River Water Quality Improvement Feasibility Investigations, Delta Support Studies, Kellogg Unit Reformulation, San Joaquin Valley Conveyance Study, Central Valley Fish and Wildlife Management Study, and Imperial Irrigation District Canal Lining and System Improvement are funded at reasonable levels.
We support these appropriations as listed on the attached Commission's recommendations dated March 14, 1985.

The P.L. 984 Small Reclamation Projects loan program is important to California as it allows work to be conducted at the local level. We support funding the loan applications in the President's Budget for Colusa County Water District, Oakdale Irrigation District, Yuba County Water Agency, Ramona Municipal Water District, and Santa Ana River Project Authority.

There are several other applications being processed by the Bureau of Reclamation. These are United Water Conservation District, Rancho California Water District and San Bernardino County (Day Creek). As we understand it, it will be impossible to fund all of these loan applications under the existing monetary authorization. Accordingly, we make no recommendation regarding these projects. We will, however, reconsider the need for funding in F.Y. 1986 after each loan has been approved by the Secretary of the Interior. The Ramona Municipal Water District Loan has been so approved and we will consider that at our April 12 meeting.

I urge this Committee to favorably consider our recommendations for appropriations for California's flood control and water resources programs in fiscal year 1985-86.

I respectfully request my statement and the attached tabulation be made a part of the record.

Attachment

CALIFORNIA WATER COMMISSION
FEDERAL FLOOD CONTROL AND RECLAMATION PROGRAMS IN CALIFORNIA FOR FISCAL YEAR 1985-86
(In Thousands of Dollars)

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION'S FINAL RECOMMENDATIONS
	CORPS OF ENGINEERS				
	GENERAL INVESTIGATIONS - Surveys				
2.	Antelope Valley Streams Los Angeles	1,000	785	140	140
	(Commission supports reprogramming an additional $260 thousand if funds can be made available within President's budget.)				
3.	Calleguas Creek Ventura	1,800	1,560	240	240
3A.	Caliente Creek Kern	1,700	1,333	140	140
3B.	Dry Creek Placer and Sacramento	825	450	150	150
4.	Guadalupe River Santa Clara, Alameda	2,424	2,289	135	135
6.	Los Angeles County Drainage Area	4,510	3,464	370	370
	(Commission supports reprogramming an additional $130 thousand if funds can be made available within the President's budget.)				
7.	Mojave River Dam San Bernardino	590	590	0	
	(Commission supports reprogramming $500 thousand if funds can be made available within the President's budget.)				

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION'S FINAL RECOMMENDATIONS
10.	San Francisco Bay Shoreline Several	3,780	2,115		
10-1.	Santa Clara and Southern Alameda Interim	1,550	1,255	295	295
10-3.	San Mateo - Northern Alameda Interim	1,210	660	225	225
11.	San Joaquin River Basin	4,415	4,030		
11-2.	Tule River	250	0	0	
11-3.	Kaweah River	100	0	0	
11-5.	Comprehensive	4,200	3,430	110	110
	(Commission supports transfering the $110 thousand budgeted under "Comprehensive" to the Kaweah River and Tule River interims and reprogramming an additional $420 thousand for these interims if funds can be made available within the President's budget.)				
13.	San Luis Obispo County Streams	960	705	225	225
14.	Santa Ana River and Orange County-Riverside, Orange, San Bernardino	9,430	7,194		

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION'S FINAL RECOMMENDATIONS
14-1.	Interim No. II Zanja Creek, San Timoteo Creek, Wilson Creek, Rialto Creek and San Jacinto River	2,015	1,616	0	
	(Commission supports reprogramming $150 thousand if funds can be made available within the President's budget.)				
14-2.	Interim No. III Orange County Tributaries Coyote Creek, Talbert, East Garden Grove, Wintersburg, Huntington Beach, and Greenville Banning Channels	2,133	732	350	350
16.	Walnut Creek Basin Contra Costa	1,059	874	185	185
18.	Cache Creek Lake and Yolo	2,300	870	600	600
19.	Redbank and Fancher Creeks Fresno	3,425	2,725	700	700

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION'S FINAL RECOMMENDATION
	GENERAL INVESTIGATIONS - CONTINUATION OF PLANNING AND ENGINEERING				
21.	Santa Ana River Main Stem Several	17,000	1,616	4,000	4,000
	(Commission supports using a portion of the $4,000 to study upstream projects if Corps investigation determines the projects to be feasible.)				
	GENERAL INVESTIGATIONS - ADVANCED ENGINEERING AND DESIGN				
22.	Cottonwood Creek Shasta, Tehama	802,000 20,900	15,860	0	500
	CONSTRUCTION - GENERAL				
24	Aquatic Plant Control	-	450	140	140
25.	Corte Madera Creek Marin	12,300	7,800 1/	600	600
27.	Dry Creek (Warm Springs Lake) Sonoma	343,000	288,835	14,800	14,800
27A.	Fairfield Vicinity Streams Solano	15,100	1,007	1,200	1,200

1/ Includes $1,500,000 to be allocated from within available funds upon receipt of local assurances for redredging Lower Corte Madera Creek.

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION'S FINAL RECOMMENDATIONS
	CONSTRUCTION - GENERAL (CONTD.)				
27B.	LACDA-Rehabilitation Los Angeles	43,600	14,020	11,800	11,800
27C.	Lytle and Warm Creeks San Bernardino	37,600	35,246	2,354	2,354
27D.	Lower San Joaquin River and Tributaries	5,600	2,350	0	
	(Commission supports reprogramming $2.9 million if funds can be made available within the President's budget.)				
28.	Merced County Streams Merced	72,200	4,550	4,000	4,000
29.	New Melones Lake Calaveras, Tuolumne, Stanislaus	383,000	341,238	1,200	1,200
29A.	Pajaro River - Uvas Carnadero Santa Clara	2,790	500	500	500
30.	Sacramento River - Major and Minor Tributaries Several	11,900	11,549	200	200
31.	Sacramento River Bank Protection Several	92,000	51,346	3,500	3,500

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION'S FINAL RECOMMENDATIONS
	CONSTRUCTION GENERAL (CONTD.)				
32.	Sacramento River, Chico Landing to Red Bluff	31,000	12,295	2,500	2,500
32A.	Sacramento River Flood Control Project	75,525	69,225	250	250
34.	San Luis Rey River San Diego	29,300	2,024	1,400	1,400
35.	Santa Paula Creek Ventura	35,900	4,791	0	0
36.	Sweetwater River San Deigo	24,200	7,125	7,200	7,200
37.	Walnut Creek Contra Costa	68,100	41,076	6,000	6,000
38.	Wildcat and San Pablo Creeks Contra Costa	16,900	1,930	100	100
	(Commission supports reprogramming additional funds if funds can be made available within the President's budget.)				
	Total Corps of Engineers			65,639	66,139

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION'S FINAL RECOMMENDATIONS
	BUREAU OF RECLAMATION PROGRAMS				
42.	Sacramento River Division	345,662	296,964	5,362	5,362
47.	Auburn-Folsom South Unit	2,060,807	338,135	3,500	3,500
50.	San Luis Unit	1,412,664	660,380	12,490	12,490
	MISCELLANEOUS PROJECT FACILITIES				
59.	Grass Valley Debris Dam Buckhorn Mountain Project Trinity, Humboldt	9,292	950	0	
	(The amount of funds which the Commission will recommend to be be reprogrammed to this project will be determined by a cost sharing agreement between State and federal governments.)				
59A.	Trinity River Sand Dredging Trinity, Humboldt (Appropriations are in operations and maintenance)	3,000	600	200	200
60.	Trinity River Fish and Wildlife Implementation and Management	38,823	0	680	680
61.	Delta Support Studies including Suisun Marsh Several	Continuing	9,635	1,100	1,100

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION'S FINAL RECOMMENDATIONS
62.	San Felipe Division Santa Clara, San Benito	313,349	260,828	37,597	37,597
	OTHER PROJECTS				
71.	Santa Margarita (Lower Colorado Region) San Diego	220,866	0	0	0
	LOAN PROGRAMS				
73.	Colusa County Water District	8,640	5,173	3,467	3,467
73A.	San Bernardino County (Day Creek)	13,500	0	0	0
73B.	Eastern Municipal Water District	25,720	17,320	4,000	4,000
74A.	Elsinore Valley MWD-Riverside	25,975	0	0	
	(The Commission supports $500,000 if funds can be made available within the President's budget.)				

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION'S FINAL RECOMMENDATIONS
	LOAN PROGRAMS (CONTD.)				
75.	Oakdale Irr. District Stanislaus, San Joaquin	17,774	7,730	4,970	4,970
76.	Yuba County Water Agency Yuba	18,180	2,324	8,400	8,400
76A.	United Water Conservation District Ventura	18,227	0	0	0
77.	Ramona Municipal Water District San Diego	18,919	17,107	1,812	1,812
77A.	Rancho California Water District Riverside	20,940	0	0	0
78A.	Santa Ana Watershed Project Authority Several	14,917	0	4,000	4,000
	FEASIBILITY INVESTIGATION				
79.	Kellogg Unit Reformulation Delta Division Contra Costa	737	669	68	68
80.	San Joaquin Valley Conveyance Study Several	1,196	453	743	743

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION's FINAL RECOMMENDATIONS
	SPECIAL INVESTIGATIONS				
82.	Minor work in connection with completed projects Several	Continuing	26	150	150
84.	Environmental and Interagency Coordination Activities Mid-Pacific Region Several	Continuing	9,840	745	745
85.	Central Valley Fish and Wildlife Management Study	2,830	2,343	487	487
86.	Technical Assistance to States	Continuing	426	175	175
	COLORADO RIVER SALINITY CONTROL PROJECT (Lower Colorado Region)				
88.	Paradox Valley Unit	85,924	16,343	1,782	1,782
89.	Grand Valley Unit	243,970	46,263	3,505	3,505
90.	Las Vegas Wash Unit	112,826	9,885	75	75

CWC NO.	PROJECT & COUNTY	TOTAL FEDERAL COSTS	ESTIMATED COSTS THRU 9/30/85	PRESIDENT'S BUDGET 1985-86	COMMISSION'S FINAL RECOMMENDATIONS
91.	Colorado River Water Quality Improvement Feasibility Investigations Multi-state	57,303	43,443	635	635
91A.	Colorado River Basin Salinity Control Project - Title I ($91 thousand for work in California)	491,356	270,970	22,000	22,000
	OTHER PROGRAMS - LOWER COLORADO REGION				
93.	Lower Colorado Water Supply Study	400	200	160	160
95.	Imperial Irrigation District Canal Lining and System Improvement	1,000	150	200	200
98.	Colorado River Front Work & Levee System (5.211 million for work in California)	161,548	28,301	17,371	17,371
Total Bureau of Reclamation				135,674	135,674
Total Corps of Engineers and Bureau of Reclamation				201,313	201,813

(The Commission supports reprogramming an additional $4.86 million for the Corps and USBR if funds can be made available within the President's budget.)

STATEMENT OF THE RECLAMATION BOARD, THE RESOURCES AGENCY, STATE OF CALIFORNIA

The Reclamation Board, as the State agency which furnishes required local assurances for Federal levee and channel projects in California's Central Valley, respectfully submits this statement in support of appropriations of Federal funds for accomplishment of flood control works.

The Reclamation Board recommends and strongly urges appropriation of funds in the amounts listed in the summary. While all projects are important to the health, safety, and well-being of Central Valley residents, the surveys and projects described as follows are particularly critical:

I. Surveys

A. Northern California Streams:

This survey, authorized in 1958 and 1962, is a study of all the streams in Northern California that flow into the Pacific Ocean, including the Sacramento River and its tributaries, in regard to flood control measures. Throughout the years, there have been many widespread and destructive floods. When flooding occurs, heavy damages are inflicted on homes, agricultural lands, and public utilities. The cost of flood fighting, cleanup and repair, and restoration is usually several million dollars each time a flood occurs. The flood events of the past demonstrate the continuing need for flood management measures in the basin.

A reconnaissance study of Dry Creek in Sacramento and Placer Counties is scheduled for completion in March 1985. The Board recommends $150,000 to pursue a feasibility study in fiscal year 1985-86.

B. San Joaquin River Basin:

This survey, authorized in 1964 and initiated in 1968, encompasses the southern portion of the Central Valley,

including part of the Delta-Central Sierra area and all of the San Joaquin and Tulare Lake Basins. The study will investigate the problems of flood control, irrigation, municipal water supply, power recreation, fish and wildlife, and water quality. The study area is the site of many complex water supply and water transportation problems. Flooding is a major problem in the study area. During the severe floods of 1969 and 1983, the area experienced extensive damages. Projects to be considered include: dams and reservoirs, stream diversion, bank protection, and levee and channel improvement.

The Reclamation Board recommends funding for the following studies for fiscal year 1985-86:

Caliente Creek	$140,000
Tule River	245,000
Kaweah River	285,000

II. Continuation of Planning and Engineering

A. Cache Creek Basin:

The Corps of Engineers has completed its feasibility report regarding water resources development in the Cache Creek Basin. The report recommends enlarging the outlet channel of Clear Lake and constructing a bypass channel to reduce flooding of development around the Lake, enlarging and raising of levees around the existing settling basin near the mouth of Cache Creek to increase the basin's sediment storage capacity, and establishing a national wildlife refuge in the existing Cache Creek Settling Basin at a total cost of $17,960,000.

This report states that a major flood problem exists along the rim of Clear Lake. Historical inflows to the Lake temporarily raise the lake level causing significant damage to lakefront development. Serious flood damages occurred in 1958,1970, and 1983 causing estimated damages of $900,000, $500,000 and $1,500,000 respectively. This

problem can be economically solved by increasing the discharge capability of the Lake's outlet channel.

Lake County has gone on record opposing the construction of a bypass channel through the recently acquired State park. They favor the alternative to enlarge the existing outlet channel.

Congress has not yet authorized this project; however, the Board recommends an appropriation of $600,000 in fiscal year 1985-86. This would accelerate the preconstruction planning stage when Congress authorizes the project.

B. Red Bank and Fancher Creeks:

The Corps of Engineers has completed its feasibility report regarding water resources development on Red Bank and Fancher Creeks, Fresno County. The report recommends single-purpose flood control improvements on Red Bank, Fancher, and Pup Creeks and Alluvial Drain; and dual-purpose flood control and recreation facilities on Big Dry Creek. The plan provides for enlargement of the existing Big Dry Creek Dam and Reservoir, a new dam on Fancher Creek, and detention basins on Red Bank and Pup Creeks and Alluvial Drain.

The report states that significant flood problems exist in the expanding Fresno-Clovis metropolitan area. Flooding occurs throughout the entire study area when channel capacities are exceeded. The most recent serious flooding in January and February 1969 caused an estimated $4.7 million in damages to agricultural lands, residences and commercial and industrial properties.

The benefit to cost ratio has been improved by changing the capacities of the Fancher Creek and Redbank Creek detention basins to provide 100-year rather than 200-year level of flood protection.

Congress has not yet authorized this project; however, the Board recommends an appropriation of $700,000 in fiscal year 1985-86 to enable the Corps of Engineers to proceed with design studies. This would accelerate the planning stage when Congress authorizes the project.

III. Advanced Engineering and Design

A. Cottonwood Creek:

The project works, authorized in 1970, consist of two dams, with 2,000,000 acre-feet of multipurpose storage. The 1979-80 and 1982-83 flood seasons again indicated the need for control on Cottonwood Creek, the largest uncontrolled tributary of the Sacramento River below Shasta Dam.

The State may contract with the Corps of Engineers to purchase water from the project; this decision, however, is still pending. The State acknowledges a need for flood control in the area and might ask to move forward with a phased construction with the Dutch Gulch Reservoir as the initial unit.

The Reclamation Board recommends appropriation of $500,000 in fiscal year 1985-86 for the Cottonwood Creek Project.

IV. Construction

A. Fairfield Vicinity Streams:

The project is located in the vicinity of the cities of Fairfield and Suisun in Solano County; the drainage basin comprises 45.8 square miles. There are five streams on which improvements are proposed. These are Ledgewood, Laurel, Union Avenue, Pennsylvania, and McCoy Creeks. The project as presented in the Corps of Engineers' Phase II GDM included channel improvements and diversion of three creeks, levees on two of the creeks, and construction of recreation facilities.

After completion of the preconstruction planning studies, local interests were not in a position to provide local cooperation assurances for the project. Therefore, the Corps placed the project in a deferred status in September 1977. However, as a result of January 1982 flood damages in the project area, there has been renewed interest in the project. In April 1982, both the Cities of Fairfield and Suisun requested the Corps to reactivate the project. The Cities stated they intended to provide local assurances for a slightly modified project. Based on this support, the Corps reclassified the project to active status on June 1, 1982. In August, the State Reclamation Board indicated its willingness to provide the local cooperation assurances for the project. The project is now being considered by the Corps of Engineers for a construction new start in fiscal year 1985-86. The initial funding would be for channel improvements on McCoy and Laurel Creeks.

The Reclamation Board recommends approval of an appropriation of $1,200,000 in fiscal year 1985-86 for the Fairfield Vicinity Streams.

B. Lower San Joaquin River and Tributaries

The Lower San Joaquin River Project was authorized in 1944 and by PL 98-63, the 1983 Supplemental Appropriations Act. The existing project completed in 1968 consists of channels, levees, and riverbank revetment from Friant Dam on the San Joaquin River to Stockton, a distance along the River of about 225 miles.

The needed work includes selective channel clearing and removal of debris and bars to restore channel capacity to historic levels on the San Joaquin River. Initial work in the Eastside Bypass has been done which was identified as an emergency situation. The next

phase of the work will be covered in a joint EIS-EIR, which is being prepared at this time.

The Reclamation Board recommends approval of an appropriation of $2,900,000 in fiscal year 1985-86 for the San Joaquin River continuing construction project.

C. Merced County Streams:

This project, authorized in 1970, will provide flood protection for Castle Air Force Base, the City of Merced, and adjacent suburban and aricultural lands at an estimated federal cost of $73,400,000. The project is contingent upon inclusion of a 2,800-acre wildlife easement area on the lower reaches of Bear Creek.

The Reclamation Board strongly recommends an appropriation of $4,000,000 in fiscal year 1985-86 for the Merced County Streams Project.

D. Sacramento River and Major and Minor Tributaries:

Improvement of Sacramento River Major and Minor Tributaries was authorized in 1944 and further amended in 1950. This project provides for revetment for protection of bypass levee slopes against erosion. The bypass levee revetment features of the project will provide protection to flood plains adjacent to the bypasses and will decrease requirements for levee repairs under emergency conditions.

The Reclamation Board recommends appropriation of $200,000 in fiscal year 1985-86 for this project.

E. Sacramento River Bank Protection:

The project, authorized in 1960, is a long-range Federal-State effort, aimed at preserving the existing project levee system of the Sacramento River. These existing levees, which offer flood protection to the Central Valley over a reach of 192 miles, are very old and subject to constant erosion. The Sacramento River

Bank Protection Project work consists of sloping and placing stone protection at those points which are identified each year as the most critical. Again in the 1983-84 flood season, increased damage occurred which further threatens existing project levees. On this project, all costs are shared with the Federal Government paying two-thirds and the State one-third.

The Reclamation Board recommends approval of an appropriation of $3,500,000 in fiscal year 1985-86 for the Sacramento River Bank Protection Project.

F. Sacramento River - Chico Landing to Red Bluff Project: This project, authorized in 1958, comprises extension and modification of the existing Sacramento River Flood Control Project by the construction of bank protection and minor channel improvements along the Sacramento River between Chico Landing and Red Bluff.

The Board recommends funding for the Chico Landing to Red Bluff Project in the amount of $2,500,000 in fiscal year 1985-86 to protect critical sites or sites which can be demonstrated as having a detrimental effect on the Sacramento River Flood Control Project.

G. Sacramento River Flood Control Project:
This project was authorized in 1917 and modified by various Flood Control and/or River Harbor Acts in 1928, 1937 and 1941.

The project comprises a comprehensive system of levees, overflow weirs, drainage pumping plants, and flood bypass channels, extending along the Sacramento River from Collinsville near its mouth in Suisun Bay, upstream to Chico Landing, and along the lower reaches of principal tributaries; together with channel clearing, rectification, snagging and bank protection on the Sacramento River and tributaries.

Maintaining the stability of the project levees has been a continuing problem along Knights Landing Ridge Cut, the Colusa Basin Drain, and near the junction of Cache Slough and the Yolo Bypass. Slips in the Knights Landing Ridge Cut, Colusa Basin Drain and Cache Slough levees are recurring, and in the past PL 99 emergency levee repairs have been accomplished to restore the levee grade and section. The Knights Landing/Colusa Drain levees protect about 100,000 acres of highly productive agricultural land, with about 2,000 people living within the area.

The Reclamation Board recommends approval of an appropriation of $250,000 in fiscal year 1985-86 to initiate design deficiency studies on the Sacramento River Flood Control Project.

U. S. Bureau of Reclamation Projects

Auburn Dam:

Auburn Dam, part of the Central Valley Project, was authorized in 1965. Auburn Dam and Reservoir is located on the North Fork of the American River adjacent to the City of Auburn. The dam height when constructed will be 700 feet. Auburn Reservoir will have a capacity of 2,300,000 acre-feet. The Reservoir will add 250,000 acre-feet of flood control space to the American River system.

The population centers of Sacramento, North Sacramento, Arden, Brighton, Carmichael, Fair Oaks, Folsom, and Rancho Cordova lie partially within the natural American River floodplain. The present Folsom Dam and levee system do not provide adequate flood protection against a Standard Project Flood. The part of the metropolitan Sacramento area that would be flooded by the

Standard Project Flood is estimated to have a population of about 160,000 people, according to the 1980 census. Auburn Dam and Reservoir will provide additional flood protection to the population centers of the metropolitan Sacramento area.

The Reclamation Board recommends appropriation of $3,500,000 in fiscal year 1985-86 for planning and design activities.

STATEMENT OF SANTA CLARA VALLEY WATER DISTRICT, CALIFORNIA

GUADALUPE RIVER, COUYOTE CREEK, AND BERRYESSA CREEK

BACKGROUND

The Guadalupe River and Adjacent Streams Study includes the Guadalupe River, Coyote Creek and Berryessa Creek. The Guadalupe River and Coyote Creek are the two major waterways that flow through the highly urbanized area of Santa Clara County, California. Historically, they have flooded the downtown areas of San Jose and Alviso beyond local capability to prevent. For example, on the Guadalupe River the estimated damages from a one percent or 100-year flood, which would inundate the urban center of San Jose, is $93,500,000. It is estimated that a 50-year flood on this river would cause $71,800,000 worth of damage under existing conditions. Damages on Coyote Creek would be $45 million during the 1% events to the north San Jose and Milpitas area. The probability of such floods occurring before implementation of flood prevention measures is quite high. A 50-year flood has an 18 percent chance of occurring during a 10-year period; a 100-year flood has about 10 percent chance of occurring during this same period. There is strong potential, therefore, that a damaging flood will occur before the problem can be resolved. The Guadalupe River had started to overflow its banks in April 1982 and January 1983 before the storm receded and avoided major damage. Even so, public and private damage amounted to several million dollars. Coyote Creek caused the greater damages, overbanking in April 1982 and again in March 1983. Hundreds of people were forced to evacuate their homes where flood water stood for many days.

STUDY SYNOPSIS

In 1971, the community asked the Corps of Engineers to reactivate its 1945 study. The Plan of Study was completed in 1973. The initial problem definition and alternative screening was completed in 1974. More detailed problem definition and

alternative studies for the Guadalupe River and Coyote Creek were completed in 1978. The third phase, study of freshwater flooding in the Baylands, was completed in 1979. The Stage 2 report was completed for the combined Guadalupe River, Coyote Creek and Baylands. The report at that time concluded there was an economical project on the Guadalupe River. However, In light of recent severe flooding, the Corps has redirected its study on Coyote Creek to address the inadequate level of protection provided by unstable levees. The study will also include Berryessa Creek.

In an effort to accelerate the completion of this project, the local community through the Santa Clara Valley Water District has provided a substantial amount of technical and financial assistance since 1972. Special planning studies have been completed by the District for inclusion into the Corps' studies at a cost of over $430,000. To date, therefore, over $2.0 million has been expended on this study.

The recent severe flood problem and the ominous threat of future damages has forced the local community to initiate a local project on Coyote Creek in anticipation of future federal participation. Nearly $3.0 million will be spent on the planning, design and construction on Coyote Creek in 1985, which is planned for incorporation into the federal project. However, without federal assistance needed flood protection cannot be achieved. The necessity to reduce Federal expenditures to meet economic goals is recognized. Nevertheless, projects such as the Guadalupe River and Adjacent Streams, where costly studies are nearly complete and economic feasibility has been established, should continue to be adequately funded.

FY 1985 FUNDING

Funding for 1985 is $175,000. This funding maintains the schedule necessary for completion of the Guadalupe River Feasibility Report and Environmental Impact Statement in late FY '85. It also includes initial funding for required feasibility studies on Coyote and Berryessa Creeks.

NECESSARY FY 1986 FUNDING

Funding during 1986 in the amount of $135,000 is essential to complete the feasibility studies on Coyote Creek and Berryessa Creek flood problems by March 1987. This figure assumes an equal local cost sharing contribution. Future funding for the Guadalupe River Project, if necessary, would be solicited from the Corps' Continuing

Planning and Engineering Program (CP&E) following final project alternative formulation.

RECOMMENDATION

The very high flood risk and potential damage leads us to urgently request your support of the President's 1986 Budget in the amount of $135,000 to complete the feasibility studies of projects on Coyote and Berryessa Creeks as part of the Guadalupe River and Adjacent Streams Study.

SURVEY OF SAN FRANCISCO BAY SHORELINE

BACKGROUND

The Bayfront areas of many of the San Francisco Bay counties have been adversely affected by land surface subsidence and, as a result, military installations, extensive lands, thousands of homes, business establishments and industries are subject to hazardous inundation from tides of the Bay. In Santa Clara County alone, approximately 40 square miles of land surface area is adversely affected. This area houses a number of federal installations including the U. S. Naval Air Station at Moffett Field and the National Aeronautics and Space Administration's Ames Research Facility. Industrial productivity could be adversely affected by tidal flooding since defense industries such as Lockheed, and many electronics, aeronautics and space firms are located in the area. The study is essential, also, in order to permit and ensure integration of any flooding solution with protection of wetlands and wildlife refuges.

The saltwater flooding problem is particularly acute in northern Santa Clara County where the threat of flooding is an annual concern. The potential for damage grows with each year. A combination of high tides, high winds, and moderate river flows has resulted in the overtopping of the inadequate, unsound, privately-owned levee system in this area. The community of Alviso is especially vulnerable to this flood threat as evidenced by disastrous inundation in 1982 and 1983. In 1985 the Santa Clara Valley Water District completed a $1.0 million construction project which strengthened and heightened the levee west of Alviso providing limited protection to the community.

STUDY SYNOPSIS

This Corps of Engineers' survey was authorized by the 1976 Omnibus Rivers and Harbors Bill to examine the tidal flooding from San Francisco Bay. Funds were first appropriated in FY 1979 and the study has been initiated by the San Francisco District office of the U. S. Corps of Engineers. The study is being conducted in two phases with

Santa Clara County and Southern Alameda counties included in Interim I, with the remaining bay area counties included in Interim II. The San Francisco District held three broadly-based public meetings in January 1979 and also retained a consultant to define damage potentials and constraints and to assimilate the testimony requesting federal assistance given at those public hearings. Work in Fiscal Years 1983 consisted of topographic mapping, environmental and economic assessment of feasible actions. Fiscal Year 1984 continued refinement of Fiscal Year 1983 studies leading to a targeted draft study report in late Fiscal Year 1985. A Final Report and EIS is scheduled for September 1986.

Funds are needed to identify the hazards from tidal inundation with an objective, scientific study. Local agencies have neither the resources nor the geographical scope to deal with this problem which affects the entire San Francisco Bay Region. Local support is very strong.

FY 1985 FUNDING

FY 1985 budget included $120,000 for Interim I of this project (South Alameda and Santa Clara Counties only).

FY 1986 FUNDING

Funds in the amount of $295,000 are required to complete Interim I of the project. The President's budget reflects $295,000 for Interim I.

RECOMMENDATION

It is important that the project proceed on schedule to completion as soon as possible. We therefore urge support of the President's Budget for 1986 in the amount of $295,000 for Interim I.

PAJARO RIVER: UVAS-CARNADERO PROJECT

BACKGROUND

The Pajaro River: Uvas-Carnadero Creek Project is located in Gilroy in the southern part of Santa Clara County, California. In 1944, Congress authorized a levee project along Uvas Creek. This project was not completed because of lack of local support. Another study, the Pajaro River Basin Study, was authorized by Congress in 1945; a specific report on the Uvas-Carnadero Creek portion was completed in August 1975. The proposed project is a single levee on the northwest side of the creek to prevent flood flows from entering the southern part of the City of Gilroy. In February 1981, a public meeting was held by the Corps of Engineers in Gilroy. As a result of the

firm citizen support and successful completion of pre-construction work, the Corps is proceeding with the approval stage for the construction of the proposed project which reflects an approximate $5.4 million total project cost and a 2.3:1 benefit to cost ratio.

The January 1982 flood, though not major in magnitude, seriously threatened the City of Gilroy. Emergency actions were necessary to prevent failure of the existing levee.

The proposed project would protect about 600 existing homes, a new high school and commercial and industrial establishments from flooding. This area is that which the City of Gilroy and the County of Santa Clara have designated for development in lieu of other areas easterly of the present city which are subject to more severe flooding and in which agricultural operations are to be preserved. The project would alleviate potential damages of $23.0 million during a 1% flood event.

STUDY SYNOPSIS

The study is now in advanced engineering and design stage, Phase II, of the General Design Memorandum (GDM). Final design is proposed for Fiscal Year 1985 with construction starting in the summer of 1986.

The study has been funded for four years at a Federal cost exceeding $600,000, assisted by substantial local costs.

FY 1984 AND FY 1985 FUNDING

In 1983 funding was provided in the final Continuing Appropriations Bill (Energy and Water portion) in the amount of $190,000. This provided sufficient funding to carry planning and design of the project through FY 1985 and to allow the project to proceed to construction in FY 1986.

FY 1986 FUNDING

To accommodate construction beginning in FY 1986 the President's budget includes $500,000. Construction will be over a two-year period.

RECOMMENDATION

Community development has long contemplated completion of this protection project. The President's Budget in the amount of $500,000 should therefore be supported to insure construction as scheduled.

STATEMENT OF FRESNO METROPOLITAN FLOOD CONTROL DISTRICT, CALIF.

My name is Jack Lansman and I am Chairman of the Board of Directors of the Fresno Metropolitan Flood Control District of Fresno County, California, the local sponsor for the Redbank-Fancher Creeks Flood Control Project which is a modification to the previously authorized Fresno County Streams, California project. I am also authorized to speak on behalf of the County of Fresno, the Cities of Fresno and Clovis, and the Fresno Irrigation District.

We respectfully request that continued construction design be included in the budget for the 1985-86 fiscal period in an amount not less than the $700,000 currently provided in the President's proposed budget.

The Redbank-Fancher Creeks project was initially identified in the Big Dry Creek project investigation of 1940 and the resulting Fresno County Streams project authorization. In 1956, the Congress specifically authorized the investigation of the project modification relating to the Redbank-Fancher Creeks stream system. Unfortunately, federal funds for the investigation were not appropriated until Fresno County was declared a part of the 1969 California disaster area. The completed investigation proves the project to be both economically justified and environmentally sound.

Noteworthy, is the fact that the Redbank-Fancher Creeks project is one which is economically justified on the basis of flood damage prevention alone. Though other benefits accrue, they are not required to produce a positive benefit/cost ratio. When constructed, the project will provide protection to 57,000 acres containing a population in excess of 120,000. Recent estimates suggest the final benefit/cost ratio will be near 2.0 to 1.0 at an 8-3/8% interest rate. Total estimated average annual flood damages exceed $[illegible],000,000 and affect both urban and agricultural properties. The proposed works will also protect an open irrigation canal system which transverses 210,000 acres of the world's most productive agricultural lands, Fresno County's gross production exceeding 1.8 billion dollars in 1982. The project will control the historic flooding which has seen the stream and canal systems overtop their banks an average of once every four years since 1953

In July 1980, the completed investigation report was forwarded to the Chief of the Corps of Engineers. The report was subsequently forwarded to the Congress as House Document 98-147. The project has been included in authorization legislation passing the House of Representatives during three recent sessions of the Congress. Though not enacted, the specially worded authorization reflected the awareness of the Congress of the project's special needs. The project is now included within Senate Bills 366 and 534, and H.R. 6 authorizing project construction. Congressional action effecting the requested appropriations is critical in that it will prevent additional delay and related increases in project costs.

We appreciate the privilege of appearing before the Committee and the past support it has given the project. We respectfully urge your continued support and ask that our statements be made a part of the hearing record.

A more detailed presentation accompanies this request.

The people of the central county area of Fresno County, California are deeply appreciative of the opportunity to have the presentations of their representatives heard by the honored members of the Congress. While the Redbank-Fancher Creeks Flood Control Project is not large by some standards, it is critically important to the Fresno-Clovis metropolitan area which is the business center of the most productive agricultural county in the world, gross production exceeding 1.8 billion dollars in 1982.

This report, first submitted in May 1971, has been prepared to substantiate and support the vital need for flood control works on Redbank and Fancher Creeks.

AUTHORIZATION:

The Redbank-Fancher Creeks project is a modification of the existing Fresno County Streams, California authorization incorporating the enlargement of the Big Dry Creek Dam and Reservoir and the containment of the balance of the stream group.

The Congress, on June 13, 1956, authorized the Corps of Engineers to reinvestigate the stream group project, this following the major floods of 1955 and 1956. Unfortunately, funds were not provided and the Corps did not begin the investigation until the area had suffered its worst flooding in history during January and February 1969. The release of funds and the start of the investigation occurred in July 1970, some fourteen years after Congressional authorization. Unfortunately, the floods of 1983 find the final authorization still pending.

PROJECT LOCATION AND NEED:

Redbank and Fancher Creeks of the Fresno County Stream Group, their tributaries and related streams addressed by the proposed project, are located on the western

slope of the Sierra Nevada mountains. The watershed encompasses some seventy-five square miles and generates storm runoff which flows through the heart of the metropolitan area. The flows impact directly on the open irrigation canal system which transverses some 210,000 acres of the world's most productive agricultural land and 45,000 acres of a densely developed urban community with a population in excess of 350,000.

It is currently estimated that the floodplain to be protected by the proposed project includes 57,000 acres with a population of 120,000 (1982) and a market value in excess of 2.4 billion dollars. Total estimated average annual flood damages exceed $11,000,000 and affect both urban and agricultural properties.

HISTORY OF FLOODING:

As a result of the uncontrolled nature of the subject stream group, flooding has occurred frequently. Floods of record occurred in March 1938, December 1955, January 1956, January 1969, February 1969, March 1978, and January 1983. In addition, available records indicate flooding of lesser severity occurred in 1952, 1958, 1965, 1972, and 1977 with the streams and irrigation canal system overtopping their banks on the average of once every four years since 1953.

Although the recent floods which occurred in March 1978 and January 1983 were of a lesser magnitude than those of 1969, thousands of dollars in damages to private homes, public roads, irrigation facilities and hundreds of acres of prime agricultural lands were experienced. Such floods again demonstrated the urgent need for immediate construction of flood control works.

LOCAL SUPPORT:

Following the floods which occurred in January and February 1969, the Fresno area was declared a part of California's disaster area. With the realization that millions of dollars in flood damages could have been prevented and that a recurrence of such floods would be even more devastating, a public hearing on the needed flood control works was held on February 28, 1969. Hundreds of the community's citizens representing some seventy-five public and private organizations met and drafted resolutions to the U.S. Army Corps of Engineers and legislative representatives urging the active pursuit of Redbank-Fancher Creeks Flood Control Project. Subsequently, the County of Fresno, the Cities of Fresno and Clovis, the Fresno Metropolitan Flood Control District, and the Fresno Irrigation District, authorized direct work with the Corps of Engineers and the Congress to secure adequate flood protection for the Fresno-Clovis metropolitan area.

In an effort to ensure the availability of lands needed for the required flood control structures, the County of Fresno acting jointly with the Fresno Metropolitan Flood Control District did, on October 22, 1974, effect open-space and conservation zoning of approximately 500 acres. More recently, the Cities of Clovis and Fresno, the County of Fresno, and the Fresno Metropolitan Flood Control District, signed contracts appropriating $335,000 per year to acquire the necessary project lands.

Relatedly, the California Water Commission has historically supported and continues to support the project. Further, the State Reclamation Board has submitted a supporting letter of intent for local assurances.

Most recently, a broadly based Citizens Project Advisory Committee has been created by the Flood Control District. The Committee and the sixteen community organizations and agencies it represents have reviewed and confirmed the project's need and design features. The Committee has also structured a financing plan to ensure the availability of the required local cost share and the equitable distribution of those costs.

ENVIRONMENTAL CONSIDERATIONS:

Upon completion and distribution of the Draft Feasibility Report and Draft Enviromental Impact Statement, a public hearing was held within the project area by the Fresno Metropolitan Flood Control District, the local project sponsor, and the U.S. Army Corps of Engineers. Testimony submitted during the subject hearing indicated that there are no areas of controversy associated with the project or its limited environmental impact. In summary, the testimony received confirmed the accuracy of the Draft Environmental Impact Statement in identifying only limited impacts and the adquacy of the proposed mitigation measures. It was also apparent that any adverse environmental impact which might be associated with the project during the brief construction period would be of a temporary nature and insignificant when compared with the permanent environmental and social benefits which would be derived.

PROJECT FEASIBILITY AND FINANCING:

The complete report, supplemented by additional detailed studies, substantiates the need for the proposed project and identifies strong economic justification. The project costs and benefits reflected by the original report are as follows:

(Total First Costs: (1983)	$81,300,000	
Average Annual Costs (8-1/8% Interest)		$7,810,000
Total Average Annual Benefits:		
Flood Control	$ 7,132,000	
Flood Proofing Cost Reduction	424,000	
Recreation	934,000	
Total Average Annual Benefits		$8,490,000

However, during the project's General Design Memorandum process, design changes have modified the estimated project costs and benefit totals. As currently estimated by the local sponsor, project costs and benefits, in 1984 dollars, are projected as follows:

Total First Costs	$63,000,000	
Average Annual Costs (8-1/8% Interest)		$4,725,000
Total Average Annual Benefits:		
Flood Control	$ 7,144,000	
Flood Proofing Cost Reductions	425,000	
Recreation	936,000	
Total Average Annual Benefits		$8,505,000

Benefit/Cost Ratio 1.8 to 1.0

Noteworthy, is the fact that the project is economically justified on the basis of flood damage reduction benefits alone. While other benefits are cited, they are not needed to produce a positive benefit/cost ratio. It should be noted that, while not included in the actual benefit calculations, the proposed project will also create significant beneficial effects in the areas of water conservation, groundwater management and wildlife enhancement.

The anticipated distribution of the project costs (based on the new cost-sharing proposals) among the Federal Government, the State of California, and the local sponsor is as follows:

Federal Government	$40,950,000
State of California	16,537,500
Fresno Metropolitan Flood Control District (Plus Annual O & M $230,000)	5,512,500
Total Project Cost	$63,000,000

PROJECT STATUS REVIEW:

Review of the completed project report by the Division Engineer resulted in his concurrence with the investigative conclusions of the District Engineer.

Upon completion of the Division Engineer's review, additional study was undertaken at the request of the Board of Engineers, that additional study similar to that normally performed during the Phase I study which follows project authorization. Unfortunately, the additional study delayed the project approximately two years causing an estimated seventeen percent increase in project costs.

During July 1980, the Board of Engineers of Rivers and Harbors forwarded to the Chief of the Corps of Engineers the completed project report and environmental impact report. The report was subsequently forwarded to the Congress as House Document 98-147, bearing the date January 24, 1984.

The project has been included in legislation passing the House of Representatives during three recent sessions of the Congress. Though not enacted, the specially worded legislation reflected the awareness of the Congress of the special needs associated with this project. As a result of these factors, the project has been approved for continued engineering and the current budget request is for the final year of such engineering work. The General Design Memorandum is to be completed in September 1985 and the Features Design Memorandum is to be completed in September 1986.

The project is included in the pending water resources development legislation (S. 366, 534, and H.R. 6), providing for final construction authorization. Timely action by the Congress effecting the necessary authorizations and appropriations will save as much as an additional two-year delay in the project, thereby saving the taxpayers further significant increases in project costs.

CONCLUSION: REQUEST FOR AUTHORIZATION

On June 13, 1984, twenty-eight years had elapsed since Congress first authorized the proposed Redbank-Fancher Creeks Flood Control Project modification to the Fresno County Streams Project. The need for the project has been identified in a total of eight different studies and investigations performed at both the local and federal levels. The project feasibility investigation completed in July 1977 confirms the project need and identifies strong economic jsutification for project construction. Further, the more advanced and detailed technical analysis associated with the General Design Memorandum has confirmed the project's need, economic strength and the previous recommendations of the Corps of Engineers.

Because it is our belief that the proposed Redbank-Fancher Creeks Flood Control Project has met all requirements for federal participation and meets all current standards of economic justification and environmental protection, we most respectfully urge the favorable action of the Committee and the Congress in authorizing the Redbank-Fancher Creeks Flood Control Project Funding.

STATEMENT OF CONTRA COSTA (CALIF.) WATER DISTRICT

SACRAMENTO - SAN JOAQUIN DELTA WATER QUALITY

Honorable Chairman and Committee members, my name is John E. DeVito, General Manager of the Contra Costa Water District, a public agency of the State of California.

For over forty-five years, Contra Costa Water District by way of repayment contracts with the U.S. Bureau of Reclamation, has been responsible for the water supply for some 300,000 people, 23 industries that employ over16,000 employees, and 150 small firms, through the Contra Costa Canal System, the first unit of the Federal Central Valley Project. The District also diverts water from the Delta under a vested water right dating back to the 1930's prior to the CVP. We depend solely and totally on the Sacramento - San Joaquin Delta for our water supply.

Due to the USBR's over-commitment of the CVP water supply and build-ups in exports from the Delta, we will experience re-occurring increased salt water intrusion in the Delta, to a level that is adverse to pubic health, causes loss of certain industrial products, adds severe penalty treatment costs to all industry, and causes damage to irrigated plants. (Note attachments.)

These adverse effects on public health, industry and agriculture occurred during 1959 - 1960 - 1961, due to USBR operations, and occurred again during the 1976 -1977 drought, due to the obvious over commitment of the CVP. For 161 days in 1959 and 143 days in 1961, due to USBR export pumping caused salt water intrusion, the Water District

distributed notices to the County Health Department, doctors, hospitals, and the press warning of high sodium levels in the water supply. USBR statements indicate that these poor water quality levels will occur in the future during normal years.

Accordingly, Contra Costa Water District respectfully requests the support for the conditions necessary to protect the beneficial uses in the Sacramento San Joaquin Delta, San Francisco Bay, and Suisun Marsh, with particular attention to:

No. 29 New Melones Lake

The Contra Costa Water District reaffirms its position that the appropriations should be conditioned to provide that New Melones Reservoir shall be operated in accordance with the provisions of Decision 1422 of the State Water Resources Control Board. Contra Costa Water District support is contingent upon expeditious acquisition of reparian habitat and flood easements downstream of the dam and resolution of downstream salmon problems related to release schedules, flow and temperature.

No. 47 Auburn - Folsom South Unit

The Contra Costa Water District supports economic, environmental and fish and wildlife studies recommended by former Secretary of the Interior, Cecil Andrus. The Contra Costa Water District opposes appropriations of construction of Auburn Dam until the following have been completed:

1. Congress has reauthorized Auburn Dam.
2. The Bureau of Reclamation agrees to comply with provisions of Decision 1400 of the California State Water Resources Control Board;
3. The State has approved the design of the dam finally selected.

The State Water Resources Control Board, Depart ment of Water Resources and Bureau of Reclamation have executed an agreement dated July 16, 1979

providing for coordination of Water Rights, environmental impact statement review and Federal project authorization.

No. 50 San Luis Drain

Due to high concentrations of chemicals, including selenium, various heavy metals, agricultural pesticides and herbicides contained in San Luis drainage water, Contra Costa Water District must expand its opposition on behalf of the water supply integrity of not only the beneficial uses in Contra Costa Water District, the Bay, the Delta, and all exporters from the Delta, but also on behalf of all Californians who must bear the economic and environmental consequences of an over-committed Federal and State water supply.

Closure of Kesterson Reservoir by the USBR does not solve the San Joaquin Valley agricultural drainage problems nor does it prevent toxic agricultural drain water from being discharged into the Delta by way of the San Joaquin River.

We urge the Congress to support the USBR towards solving the agricultural drainage problems in the San Joaquin Valley and also prevent the discharge of drainage water into the Delta or streams tributary to the Delta.

We therefore respectfully recommend that there be inserted the following amendment in the 1986 Appropriations Act:

"Provided further, that construction of the Drain extension north of Kesterson Reservoir shall not be initiated, and the final point of discharge for the interceptor drain for

the San Luis Unit shall not be determined until:

1. An NPDES permit for the proposed discharge to the Delta has been issued by State Water Resources Control Board and approved by Administrator, U.S. Environmental Protection Agency.
2. Any necessary treatment facilities and storage shall be in place and fully operable prior to initiation or discharge.
3. Sufficient storage shall be provided so if and when necessary, discharge to Delta water could be limited to those times during the tidal cycle when the discharge would have minimum adverse impact on Delta Water quality.
4. The Drain system is so designed, constructed, and operated that discharge to Delta waters could be stopped during critically dry periods.
5. Those entities discharging to the Drain are required to develop and implement conservation programs which will minimize the discharge of both water and pollutants to the Drain.
6. A continuing detailed monitoring program is developed.
7. Contra Costa Water District reaffirms in general its opposition to new budget authority for the San Luis Drain until the Bureau of Reclamation agrees that the Federal Central Valley Project and the State Water Project will be operated to meet the identical water quality standards in the Delta as proposed in the USBR/DWR Coordinated Operations Agreement.

No. 61 Delta Support Studies including Suisun Marsh

Bureau of Reclamation and Department of Water Resources agree operation of Federal Central Valley and State Water Projects have adverse

effects on municipal, industrial and agricultural users as well as on fish and wildlife in the Sacramento -San Joaquin Delta and San Francisco Bay Estuary. State Water Resources Control Board's Decision 1485 requires environ mental studies be continued for use in future State water rights hearings.
Contra Costa Water District urges full fundings for these studies including efforts in the Bay and Suisun Marsh.

No. 62 San Felipe Division

Contra Costa Water District strongly urges Congress not to underfund or lower the budget level. More cuts will seriously disrupt the plans to meet the needs of Santa Clara and San Benito Counties. The Contra Costa Water District urges the Congress to provide that diversions of water from the Delta by the Bureau of Reclamation be subject to federally approved Delta water quality standards.

No. 80 Feasibility Investigations
Kellogg Unit Reformation
Delta Division

Consistent with the Federal cost-sharing policy, Contra Cost Water District has urged the USBR Regional Director, Mid-Pacific Region, to develop a plan of study for Kellogg Reformation that provides for in-kind contributions at Water District expense, and to the extent District contributions meet the requirements of Federal law, regulations and policy, should be credited to project costs. Contra Costa Water District supports funding of feasibility investigation of Los Vaqueros Reservoir and relocation of Contra Costa Canal intake. Los Vaqueros could also be used to provide an urgently needed standby or emergency

water supply along with water quality benefits for other Bay Area water agencies such as East Contra Costa Irrigation District, Santa Clara Valley Water District, Alameda County Water District, Alameda County Flood Control and Water Conservation District Zone 7, East Bay Municipal Utility District, City of San Francisco, etc.

The State and USBR have executed a memorandum of understanding dated December 12, 1980 regarding a joint investigation of the Los Vaqueros-Kellogg Project including relocation of Contra Costa Canal intake.

No. 84	Environmental and Interagency Coordination Activities, Mid-Pacific Region
No. 85	Fish and Wildlife Management Study

In summary, our comments in the past and specifically at this time, recognize and commend the wisdom of the Congressional enactment of Public Law 95-46 -- The San Luis Task Force Study -- which study "points to the need for profound changes in Bureau of Reclamation procedures in some instances and legislative changes in others".

Please accept our appreciation for this opportunity to appear, and may this statement be made part of the record.

STATEMENT OF KINGS RIVER CONSERVATION DISTRICT, CALIFORNIA

My name is Garvin H. White and I am President of the Board of Directors of the Kings River Conservation District of Fresno, California. I am appearing today in support of the Redbank-Fancher Creeks Flood Control Project.

My purpose before the Committee is to request that federal funding to support construction design be included in the budget for the 1983-84 fiscal period in an amount not less than the $700,000 currently provided in the President's proposed budget.

The Redbank-Fancher Creeks project was initially identified in the Big Dry Creek project investigation authorized by the Congress in 1940. In 1956, the Congress specifically authorized the flood control project investigation for the Redbank and Fancher Creeks stream system. Unfortunately, federal funds for the investigation were not appropriated until Fresno County was declared a part of the 1969 California disaster area. Since that time, however, the Congress has made funds available to meet the Corps' needs in the project investigation. That investigation is now complete and identifies the need for the project, proving it to be both economically justified and environmentally sound.

Noteworthy, is the fact that the Redbank-Fancher Creeks project is one which is economically justified on the basis of flood damage prevention alone. Though other benefits accrue from the project, they are not required to produce a positive benefit-cost ratio. When constructed the project will provide protection to 57,000 acres containing a population in excess of 120,000 at a benefit-cost ratio of 1.8 to 1.0. Total estimated average annual flood damages exceed $11,000,000 and affect both urban and agricultural properties. The proposed works will also protect an open irrigation canal system which transverses 210,000 acres of the world's most productive agricultural lands, Fresno County's annual production exceeding 1.8 billion dollars. The project will control the historic flooding which has seen the stream and canal systems overtop their banks an average of once every four years since 1953.

In July 1980, the completed investigation report was forwarded to the Chief of the Corps by the Board of Engineers of Rivers and Harbors. The report was subsequently forwarded to the Congress as House Document 98-147. The project has been included in authorization legislation passing the House of Representatives during three recent sessions of the Congress. Though not enacted, the specially worded authorization reflected the awareness of the Congress of the project's special needs. The project is now included in S.366, S.534 and H.R.6 authorizing project construction. Congressional action effecting the requested appropriations is critical in that it will prevent additional delay, saving an estimated twenty percent in increased project costs.

I appreciate the privilege of appearing before the Committee and the past support the Committee has given the project. I respectfully urge your continued support and ask that my statement be made a part of the hearing record.

A more detailed presentation accompanies this request.

The Kings River Conservation District and the people of the central county area of Fresno County, California are deeply appreciative of the opportunity to have our presentation heard by the honored members of the Congress. While the Redbank-Fancher Creeks Flood Control Project is not large by some standards, it is critically important to the Fresno-Clovis metropolitan area which is the business center of the most productive agricultural county in the world; gross production exceeding 1.8 billion dollars annually in 1982.

This statement has been prepared to substantiate and support the vital need for flood control works on Redbank and Fancher Creeks. These two uncontrolled natural streams are related to and are a part of the San Joaquin-Kings River Interstream Group which were included in the San Joaquin River Basin Survey by the Corps of Engineers for more efficient management of the investigations. The Redbank and Fancher Creeks study was removed from the Interstream Group and listed as a separate project when the South Pacific Division of the Corps forwarded the completed feasibility report and the required environmental impact study to the Board of Engineers of Rivers and Harbors in July 1977.

AUTHORIZATION:

The Congress, on June 13, 1956, authorized the Corps of Engineers to investigate the feasibility of a federal flood control project for the Redbank-Fancher Creeks stream group, following the major floods of 1955 and 1956. Unfortunately, funds were not provided and the Corps did not begin the investigation until the area had suffered its worst flooding in history during January and February of 1969. The release of funds and the start of the investigation occurred in July 1970, some fourteen years after Congressional authorization.

PROJECT LOCATION AND NEED:

Redbank and Fancher Creeks, their tributaries and related streams addressed by the proposed project, are located on the western slope of the Sierra Nevada. The watershed encompasses some seventy-five square miles and generates storm runoff which flows through the heart of the metropolitan area. The flows impact directly on the open irrigation canal system which transverses some 210,000 acres of the world's most productive agricultural land and 45,000 acres of a densely developed urban community with a population in excess of 350,000.

It is currently estimated that the flood plain to be protected by the proposed project includes 57,000 acres with a population of 120,000 and a market value in excess of 2.4 billion dollars. Total estimated average annual flood damages exceed $11,000,000 and affect both urban and agricultural properties.

HISTORY OF FLOODING:

As a result of the uncontrolled nature of the subject stream group, flooding has occurred frequently. Floods of record occurred in March 1938, December 1955, January 1956, January 1969, February 1969, March 1978 and January 1983. In addition, available records indicate flooding of lesser severity occurred in 1952, 1958, 1965, 1972, and 1977 with the streams and irrigation canal system overtopping their banks on the average of once every four years since 1953.

Although the recent floods which occurred in March 1978 and January 1983 were of a lesser magnitude than those of 1969, thousands of dollars in damages to private homes, public roads, irrigation facilities and hundreds of acres of prime agricultural lands were experienced. Such floods again demonstrated the urgent need for immediate construction of flood control works.

LOCAL SUPPORT:

Following the floods which occurred in January and February 1969, the Fresno Area was declared a part of California's disaster area. With the realization that millions of dollars in flood damages could have been prevented and that a recurrence of such floods would be even more devastating, a public hearing on the subject of needed flood control works was held on February 28, 1969. Hundreds of the community's citizens representing some seventy-five public and private organizations met and drafted resolutions to the U.S. Army Corps of Engineers and legislative representatives urging the active pursuit of Redbank-Fancher Creeks flood control project. Subsequently, the County of Fresno, the Cities of Fresno and Clovis, the Fresno Metropolitan Flood Control District, the Fresno Irrigation District, and the Kings River Conservation District authorized direct work with the Corps of Engineers and the Congress to secure adequate flood protection for the Fresno-Clovis metropolitan area.

In an effort to ensure the availability of lands needed for the required flood control structures, the County of Fresno acting jointly with the Fresno Metropolitan Flood Control District did, on October 22, 1974, effect open-space and conservation zoning of approximately 500 acres. More recently, the Cities of Clovis and Fresno, the County of Fresno, and the Fresno Metropolitan Flood Control District, have signed contracts appropriating $335,000 per year to acquire the necessary project lands.

ENVIRONMENTAL CONSIDERATIONS:

Upon completion and distribution of the Draft Feasibility Report and Draft Environmental Impact Statement, a public hearing was held within the project area by the Fresno Metropolitan Flood Control

District, the local project sponsor, and the U.S. Army Corps of Engineers. Testimony submitted during the subject hearing indicated that there are no areas of controversy associated with the project or its limited environmental impact. In summary, the testimony received confirmed the accuracy of the Draft Environmental Impact Statement in identifying only limited impacts and the adequacy of the proposed mitigation measures. It was also apparent that any adverse environmental impact which might be associated with the project during the brief construction period would be of a temporary nature and insignificant when compared with the permanent environmental and social benefits which would be derived by the construction of the needed works.

PROJECT FEASIBILITY AND FINANCING:

The completed report, supplemented by additional detailed studies, substantiates the need for the proposed project and identified-strong economic justification. The project costs and benefits reflected in the completed report are as follows:

Total First Costs: (1983)	$81,300,000	
Average Annual Costs (8-1/8% Interest)		$7,810,000
Total Average Annual Benefits:		
Flood Control	7,132,000	
Flood Proofing Costs Reduction	424,000	
Recreation	934,000	
Total Average Annual Benefits		$8,490,000

However, during the project's construction design, changes approved by the local sponsor have modified the estimated project costs and benefit totals as reflected below.

Total First Costs:	$63,000,000	
Average Annual Costs (8-1/8% Interest)		$4,725,000
Total Average Annual Benefits:		
Flood Control	7,144,000	
Flood Proofing Costs Reduction	425,000	
Recreation	936,000	
Total Average Annual Benefits		$8,505,000

Benefit/Cost Ratio 1.8 to 1.0

It should be noted that, while not included in the actual benefit calculations, the proposed project will also create significant beneficial effects in the areas of water conservation, groundwater management and wildlife enhancement.

The anticipated distribution of project costs between the Federal Government, the state of California, and the local sponsor is as follows:

Federal Government	$40,950,000
State of California	16,537,500
Fresno Metropolitan Flood Control Dist. (Plus Annual O & M @ $230,000)	5,512,500
Total Project Costs	$63,000,000

PROJECT STATUS REVIEW:

Review of the completed project report by the Division Engineer resulted in his concurrence with the investigative conclusions of the District Engineer.

Since the completion of the Division Engineer's review, additional study was undertaken at the request of the Board of Engineers, that additional study similar to that normally performed during the Phase I study which follows project authorization.

Unfortunately, the additional study delayed the project for approximately two years causing an estimated seventeen percent increase in project costs.

During July 1980, the Board of Engineers of Rivers and Harbors forwarded to the Chief of the Corps of Engineers the completed project report and environmental impact report. The report was subsequently forwarded to the Congress as House Document 98-147, dated January 24, 1984.

The project has been included in legislation passing the House of Representatives during three recent sessions of the Congress. Though that legislation was not enacted, the specially worded authorization reflected the awareness of the Congress of the special needs associated with this project. As a result of these factors, the project has been approved for continued engineering and the current budget request is for the final year of such engineering work.

The project is included in the pending water resources development legislation (S.366, S.534 and H.R.6), providing for final construction authorization. Timely action by the Congress effecting the necessary authorizations and appropriations will save as much as an additional two-year delay in the project, thereby saving the taxpayers further significant increases in project costs.

CONCLUSION: REQUEST FOR AUTHORIZATION

On June 13, 1984, twenty-seven years had elapsed since Congress first authorized the proposed Redbank-Fancher Creeks Flood Control Project. The need for the project has been identified in a total of eight different studies and investigations performed at both the local and federal level. The project feasibility investigation completed in July 1977 confirms the project need and identifies strong economic justification for project construction. Further, the more advanced and detailed technical analysis performed for the Board of Engineers has confirmed the previous recommendations of both the District and Division Engineer of the Corps.

Because it is our belief that the proposed Redbank-Fancher Creeks Flood Control project has met all requirements for federal participation and meets all current standards of economic justification and environmental projection, we most respectfully urge the favorable action of the Committee and the Congress in authorizing the Redbank-Fancher Creeks Flood Control Project funding.

STATEMENT OF LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

Summary of recommendations by Los Angeles County Department of Public Works concerning the budget allocations to the U.S. Army Corps of Engineers:

1. Los Angeles County Drainage Area (LACDA) Study - We strongly support the President's budget and the California Water Commission's recommendation for an allocation of $370,000 for continuation of the LACDA Study. Because of the seriousness of known deficiencies in major elements of our flood control system, we further urge that Congress include language in the appropriations bill for water projects that will commit funds for remedial work as soon as this study is completed.

2. Antelope Valley Study - Support the President's budget and the California Water Commission's recommendation for a $140,000 allocation for this study.

3. Rehabilitation - Support the $11.8 million recommended Presidential budget allocation to the Corps to rehabilitate critical areas of the Los Angeles County flood control system for which it is responsible.

Mr. Chairman and Gentlemen:

Los Angeles County has one of the most extensive urban flood control systems in the nation. The economic viability of the nation's second largest metropolitan area and the well-being of most of its 7.7 million residents is directly dependent on the protection afforded by this system. Many important elements of the system were designed in the late 1930's and 1940's before the explosive population growth which occurred following World War II.

The Los Angeles County Drainage Area Study was started in the 1970's when it was realized that much more extensive urbanization was occurring than was assumed by the designers of the system. The purpose of the study is to determine if the major elements of the system are adequate, and if they are not, to recommend appropriate remedial work.

Our own experience during the wet years of 1978, 1980, and 1983 has caused us to conclude that there are major deficiencies in the system. The level of protection afforded by the Los Angeles River is probably the most serious of these deficiencies. We corroborate and support recent congressional testimony by the Corps' General Donald Palladino that these deficiencies are similar in magnitude to those of the Santa Ana River in neighboring Orange County. Overflow from the Los Angeles River during a major storm event could jeopardize billions of dollars worth of property and pose a threat to those who live and work in proximity to the river. We therefore strongly urge that Congress give high priority to the funding of the LACDA Study and that because of the magnitude and seriousness of the problem, include in this year's appropriation bill for water projects a commitment to fund remedial work immediately upon completion of the study.

High priority is also recommended for the appropriation of $140,000 needed to continue the Corps' Antelope Valley Streams Study. We are confident that this study will demonstrate sufficient benefit to important national defense facilities, such as Edwards Air Force Base, to justify significant Federal participation in urgently needed regional drainage facilities. These facilities will also provide protection for the valley's current residents and ensure its continued orderly growth. The Los Angeles County Department of Public Works is cooperating with the Cities of Lancaster and Palmdale to develop a Master Plan of Drainage and to assess drainage fees from developers that will provide an important local contribution to the planning and construction of these facilities.

We also support the $11.8 million recommended for LACDA rehabilitation. These funds are needed to repair damages in portions of the Los Angeles River system operated and maintained by the Corps' Los Angeles District. This will ensure the structural and operational integrity of a vital portion of our cooperatively maintained flood control system.

STATEMENT OF CALAVERAS, STANISLAUS, AND TUOLUMNE COUNTIES, CALIF.

SUMMARY

The New Melones Project on the Stanislaus River in California was completed in 1978. The reservoir is full and downstream flows are regulated to provide excellent recreational conditions. The Congressional authorization for the Project provides for Federal construction of recreational facilities to a total of $46,190,000. To date, including F.Y. 1985 funding, only $15,245,000 has been spent. Large numbers of people are flocking to the area placing heavy financial burdens on the local police and public works staff.

For F.Y. 1986 we urge that $10,360,000 be added to the President's Budget of $1,200,000 for a total of $11,560,000 to provide facilities at the most critical sites.

The Flood Control Act of 1944, subsequently modified by the Flood Control Act of 1962 (P.L. 87-874), authorized construction of the New Melones Dam and Reservoir and construction of general recreational facilities around the Lake and along the Lower Stanislaus River. In addition, it authorized full funding for all construction costs as well as future operation and maintenance costs.

The Federal Government through the Corps of Engineers, made a firm commitment in its "Master Plan" and during extensive public hearings on the Project to construct these recreational areas. The New Melones Dam was completed in 1978. To date, including F.Y. 1985, only $16,245,000 of the planned total cost of $46,190,000 for recreational facilities has been spent. Meanwhile, with the reservoir full and lower river flows regulated, large numbers of people are flocking to the area. Without adequate sanitary and parking facilities heavy burdens are being borne by the local police, and public works forces without means of funding.

The Administration, contrary to the Congressional Authorization, has determined that construction of the remaining facilities can be completed only if non-federal agencies (counties, cities, etc.) share in the cost of construction and assume totally on-going maintenance responsibility. Additionally, in the F.Y. 1985 Appropriation Act the Congress reiterated the policy that the Federal Government is to finance the recreational facilities.

For F.Y. 1985 the Congress appropriated for New Melones Project $6,000,000, including $1,500,000 above the President's budget. The $1,500,000 to be spent on recreation facilities. The Administration promptly impounded the $1,500,000 and indicates it will not be spent on the project. Furthermore, the Corps of Engineers informs us that no work is planned after F.Y. 1986 on recreational facilities.

The local governments surrounding the New Melones-Lower Stanislaus recreation areas do not have the funds to relieve the federal government of its commitment or share in the cost of developing recreation areas for the hundreds of thousands of visitors who are expected to utilize the facilities, most of whom reside outside of the affected cities and counties.

Recognizing the financial constraints facing the federal government, the counties affected by the project have developed a minimum improvement plan which meets the essential needs of the users without placing undue burden on the affected local government agencies. Accordingly, to make reasonable progress towards this objective, we are requesting that the $240,000 provided in the President's F.Y. 1986 Budget for recreation be increased by $10,360,000 to $10,600,000. This would make the total for the New Melones Project $11,560,000 and allow completion in F.Y. 1986 of the work we requested last year for F.Y. 1985.

STATEMENT OF TEHAMA COUNTY (CALIF.) BOARD OF SUPERVISORS

We are requesting your support for funding for Fiscal Year 1986 for a Federal water project which will significantly affect Tehama County. Specifically, we request your support for the minimum capability of the Corps of Engineers to continue the Phase II Design Studies for the Cottonwood Creek Dams Project ($500,000). In our opinion, it is imperative that this vitally needed flood control and water supply project proceed expeditiously.

The benefit-cost ratio reported to Congress in the 1970 Survey Report was 1.8 to 1. Based on current data, as presented in the final general design memorandum, Phase I, Plan Formulation, the current ratio is 1.3 to 1, even though an interest rate of 7 7/8% was used and in spite of inflationary times since 1970.

As evidenced by the statements submitted by the California Water Commission and the State Reclamation Board, the administration of the State of California continues to support this project. Previous State studies have indicated that without additional water development, the State Water Project will fall short of its annual contractual commitments by over 2 million acre feet. The water conserved by the Cottonwood Creek Project would help to alleviate that shortage and is the only currently authorized State or Federal project which has the potential to add to the State's developed water supply in the near future.

The Phase I Studies which were accomplished in cooperation with the U. S. Fish and Wildlife Service, California Department of Fish and Game, the Corps of Engineers and others, indicate that environmental problems will be minimized on this project as a result of the large investment proposed for environmental mitigation and enhancement measures. It is probably the most viable project in the State of California today. The following is an outline of some of the benefits which would be derived from this project:

----Cottonwood Creek is still the largest uncontrolled tributary to the Sacramento River and Delta system. Water stored by this project would benefit the entire State in the form of reduced flood flows and a corresponding reduction in the flood and erosion problems along the Sacramento River. Expeditious completion of the project will prevent a recurrence of the devastating 1983 floods which were estimated to have caused over $60 million in flood damages along Cottonwood Creek and the Sacramento River. Tehama County is particularly vulnerable to the flooding from Cottonwood Creek because of our immediate downstream proximity to Cottonwood Creek.

----The Cottonwood Creek Project would supply approximately 200,000 acre-feet annually in new water supply. This is the amount of water needed to meet the requirements of approximately 800,000 people or approximately 70,000 acres of land to provide food for the nation. The State of California has made it very clear that the continued prosperity and growth of the State is vitally dependent upon development of new water sources and conservation of waters otherwise wasted to the ocean.

----The project would provide much needed construction jobs and new permanent jobs associated with the operation of the reservoirs and the tourism generated by the project. This would give a timely boost to the sagging economy of Northern California.

----The Board of Supervisors is under continuing pressure to permit the development of the land in the proposed project area by dividing it into smaller parcels. If the land uses are to remain compatible with a project of this magnitude, it is imperative that studies leading to construction proceed as rapidly as possible so that the necessary rights of way can be purchased with the least disruption to private property owners. It is grossly unfair to the property owners in the project area to continue to live with the uncertainties related to the use of their property.

----The Cottonwood Creek Project has broad based support which includes those interests oriented to water development and those oriented to protecting the environment. The project enjoys a good cost-benefit ratio, and will provide benefits to the local area as well as to the State and the Nation. The project continues to be supported by the State administration and by the various counties of Northern California, including the Northern California County Supervisors Association and the Superior California Water Association.

In closing, it is respectfully requested that you support the funding of the minimum capability of the Corps of Engineers to continue the Phase II Design Studies for the Cottonwood Creek Dams Project in Shasta and Tehama Counties in the amount of $500,000.

We appreciate the opportunity to provide these comments and to be represented before your committee.

Statement of Santa Ana River Flood Protection Agency, California

Summary of Request:

The President's Budget for Fiscal 1986 proposes $4,000,000 for continuing planning and engineering for the Santa Ana River Main Stem Project in Orange, Riverside and San Bernardino Counties. This Agency supports this amount and requests your approval upon a condition that a part may be used for planning and engineering for upstream storage units, alternates to the Mentone Dam.

Mr. Chairman and members of the committee, I am George Osborne representing the Santa Ana River Flood Protection Agency, a joint powers group of 18 Orange County cities, the County of Orange, the Orange County Flood Control District, the Orange County Sanitation Districts and the Orange County Water District. Its purpose is to obtain a project or projects to correct the worst flood hazard west of the Mississippi River, one that threatens Orange County with $12 billion in property damage.

The Santa Ana River originates in the high San Bernardino Mountains and flows approximately 75-miles across San Bernardino, Riverside and Orange Counties to the Pacific Ocean.

For a number of years the Boards of Supervisors of the three counties have been in accord on the need for and the generalities of the remedial project developed by the Corps of Engineers known as the Santa Ana River Main Stem Project. The only note of discord has been an internal conflict in San Bernardino County over the best upstream storage unit of the Project, i.e., Mentone Dam or some alternate. The cooperation between the three boards is demonstrated in three actions pertinent to the request that work on upstream storage studies be continued. These actions were:

1. In April 1982 the three boards requested the Secretary of the Army to submit the Santa Ana River Report to the Congress with funding limited to the lower 2/3 (without Mentone Dam) and with the understanding that an upper element would be required in the future.

2. In March 1983 the three boards requested language in the authorization bill restricting construction to the lower 2/3 and with the remainder undertaken after the upstream storage issues are resolved.

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3. In November 1983 the three boards advised the Assistant Secretary of the Army (Civil Works) that it was their recommendation that the alternate upper storage should be addressed by the Corps of Engineers without delay.

In the 98th Congress, water project authorization bills made noteworthy progress toward breaking the long drought since the last construction authorization in 1970. Now, with three authorization bills in the 99th Congress, authorization of the Santa Ana River Project may become a reality. This emphasizes the desirability of continuing the planning work in anticipation of an early construction start.

The Agency's Executive Committee (composed of elected Councilmen) on March 21 unanimously supported the President's $4,000,000 for continuing planning and engineering and requested that your committee specify, either in the appropriation bill itself or in the report accompanying the bill, that portions of the $4,000,000 as deemed necessary and desirable by the Chief of Engineers be used for furthering planning and engineering for the selected alternate to Mentone Dam.

This request is based in part on the question of whether the funds may, without specific direction of Congress, be spent in Fiscal 1985 in view of the official transmission of the Phase I General Design Memorandum to the Congress. The other basis for the request is the desire not to lose additional time, upon authorization, in starting construction of the first phase of the project.

Your kind consideration of these requests are sincerely appreciated by this Agency.

STATEMENT OF MERCED COUNTY STREAMS GROUP, CALIFORNIA

My name is Jay Anderson, Secretary of the Merced County Streams Group in Merced, California. I am representing the County of Merced, which is the sponsor of the Merced County Streams Project: The County is joined by the Merced Irrigation District, the City of Merced, the El Nido Irrigation District and the Le Grand-Athlone Water District.

The plan formulated by the Corps of Engineers, Sacramento District, shows that the construction of dams on Canal and Black Rascal Creeks, the enlargement of Bear Creek Dam and the improvement of 47 miles of channels and levees would provide for protection to about 55,000 acres of agricultural and urban areas. It would also provide protection to Castle Air Force Base, a major installation of the Strategic Air Command. The protection to Castle Air Force Base at present is by diverting flood water into the Merced Irrigation District canals through areas completely out of the flood plain. This practice has resulted in damages to the District's water distribution

system, and must be discontinued. The City of Merced, with a population of approximately 40,000 is vulnerable to flooding without the project.

The agricultural areas subject to flooding are planted to a variety of tree and row crops and comprise some of the finest agricultural lands in the San Joaquin Valley. Dairy and beef cattle thrive on many acres of irrigated pasture. Less than 2% of the 1984 crop value was under any Federal or State subsidy.

The total Federal and Non-Federal cost of the project is estimated to be $110,000,000 and is economically feasible with a favorable benefit-cost ratio. Damages are estimated to be in excess of $7,000,000 per year without the construction of the project. Portions of the project area were declared a Disaster Area due to heavy flooding in 1982-83.

The studies by the Corps of Engineers were started in 1958 and led to Congressional Authorization in 1970. Approximately $9,316,000 has been spent on the Phase I and Phase II studies by the Corps, and the project is in line for a construction start.

The project has the support of State and Local authorities and negotiations are ongoing in an attempt to identify Federal and Non-Federal funding levels.

This is a request that your Committee support the sum of $4,000,000 as recommended by the California Water Commission, and the Corps of Engineers. The President's Budget includes this amount. The allocation of this amount will allow the project, which is so vital to the Community, State and Nation to proceed.

STATEMENT OF SANTA ANA WATERSHED PROJECT AUTHORITY, CALIFORNIA

The Santa Ana Watershed Project Authority hereby requests funding authorization in the amount of $4,000,000 for construction of a proposed Imported Water Conveyance System to serve water customers in a portion of Riverside County, California. As a result of the reduction in water supplies to this area from the Colorado River, it is necessary that a new conveyance system be constructed to provide water from another source to supply established water uses, the majority of which are agricultural. The project will consist of 85,000 feet of water line, a pump station and a 10 million gallon reservoir. Because of urgent needs, design has commenced, and construction of partial pumping capacity is underway, using part of the local contribution fund. The Loan Application Report was approved by the Secretary on 3 October, 1983, and contracts were executed with the USBR on February 11, 1985. To date, approximately $600,000 has been directly spent on the project. No grant funds are being requested. All Federal funding will be repaid. The following summarizes project funding:

Total Project Cost		$ 18,728,000
Loan (30-year repayment)		$ 14,917,000
Local Contribution		$ 3,811,000
Rights-of-Way	($ 100,000)	
Loan Application	(175,000)	
CEQA-EIR	(25,000)	
Filing Fee	(1,000)	
Local Administration of Loan	(10,000)	
Proposed Pump Station	(1,226,000)	
Cash	(2,274,000)	

PROPOSED IMPORTED WATER CONVEYANCE SYSTEM
PROJECT SUMMARY

LOCATION

The Santa Ana Watershed Project Authority (SAWPA) is located within the boundary of the Santa Ana River Watershed and includes portions of Orange County, Riverside County, and San Bernardino County, approximately 55 air miles east of the City of Los Angeles, California.

ORGANIZATION

SAWPA was legally organized in 1973 under the laws of the State of California. SAWPA was created under a joint powers agreement between Western Municipal Water District, Chino Basin Municipal Water District, San Bernardino Valley Municipal Water District, and Orange County Water District. In 1984, Eastern Municipal Water District of Riverside County joined the agency. SAWPA was created by these districts to act on their behalf in such matters as planning, constructing, operating and maintaining irrigation, water quality improvement, or other water projects financed privately or through loans or grants. The agency has authority to execute a contract with the United States for repayment of the loan, has the power of eminent domain, and has authority to raise funds through assessments to member agencies as necessary for repayment of the loan.

PLAN

Western Municipal Water District of Riverside County, California, one of the five member agencies of SAWPA currently relies on imported Colorado River Water supplied by the Metropolitan Water District of Southern California (MWD) as its sole source of supply. MWD currently has a contract entitlement of 2,011,500 acre feet per year of State Project Water and 1,212,000 acre feet per year of Colorado River Water. When the Central Arizona Project goes into operation in 1985, the Colorado River Water entitlement will be reduced to 550,000 acre feet per year, a reduction of 55 percent compared to the current entitlement.

The proposed project would protect the existing agricultural economy in this portion of Western Municipal Water District by providing conveyance facilities to transport State Project water from MWD's Box Springs Feeder to agricultural users in lieu of the diminished Colorado River Water. The higher quality State Project water would provide additional benefit by decreasing the amount of applied water necessary to optimize crop yields.

PHYSICAL WORKS

The principal project features are shown on Figure 1 and include:

1. Gravity pipeline beginning at the upstream side of the Mills Filtration Plant and running westerly approximately 65,000 feet. This pipeline would start as a 36-inch diameter line with a capacity of 32.5 cfs.

2. Ten million gallon storage reservoir located near the westerly end of the gravity pipeline. This reservoir would provide storage equal to approximately one-half the ultimate macimum day demand for balancing diurnal flow variations and as protection against emergency outage of the Box Springs Feeder.

3. Pressure pipeline beginning at the downstream side of the Mills Filtration Plant and running southerly approximately 18,300 feet. This pipeline would start as a 36-inch diameter line with an ultimate capacity of 41.7 cfs. An additional 12.2 cfs will be transported by existing pipelines in the area. The pipeline would connect to an existing distribution system which currently conveys treated Colorado River water from a southerly supply point.

4. Pumping station expansion at the site of the Mills Filtration Plant, supplying water to the pressure pipeline. The added facilities would be capable of pumping 33.3 cfs at a total dynamic head of 170 to 220 feet, to increase total plant capacity to 53.9 cfs.

STATEMENT OF SHASTA COUNTY (CALIF.) BOARD OF SUPERVISORS

Mr. Chairman, members of the committee, I am Pete Peters, Supervisor from District 5 in Shasta County, California, and Chairman of the Board of Supervisors of that County.

We are requesting your support for funding for Fiscal Year 1986 for a Federal water project which will significantly affect Shasta County. Specifically, we request your support for the minimum capability of the Corps of Engineers to continue the Phase II Design Studies for the Cottonwood Creek Dams Project ($500,000). In our opinion, it is imperative that this vitally needed flood control and water supply project proceed expeditiously.

The benefit-cost ratio reported to Congress in the 1970 Survey Report was 1.18 to 1. Based on current data, as presented in the final general design memorandum, Phase I, Plan Formulation, the current ratio is 1.3 to 1, even though an interest rate of 7 7/8% was used and in spite of inflationary times since 1970.

As evidenced by the statements submitted by the California Water Commission and the State Reclamation Board, the administration of the State of California continues to support this project. Previous State studies have indicated that without additional water development, the State Water Project will fall short of its annual contractual commitments by over 2 million acre feet. The water conserved by the Cottonwood Creek Project would help to alleviate that shortage and is the only currently authorized State or Federal project which has the potential to add to the State's developed water supply in the near future.

The Phase I Studies which were accomplished in cooperation with the U.S. Fish and Wildlife Service, California Department of Fish and Game, the Corps of Engineers, and others, indicate that environmental problems will be minimized on this project as a result of the large investment proposed for environmental mitigation and enhancement measures. It is probably the most viable project in the State of California today. The following is an outline of some of the benefits which would be derived from this project:

° Cottonwood Creek is still the largest uncontrolled tributary to the Sacramento River and Delta system. Water stored by this project would benefit the entire State in the form of reduced flood flows and a corresponding reduction in the flood and erosion problems along the Sacramento River. Expeditious completion of the project will prevent a recurrence of the devastating 1983 floods which were estimated to have caused over $60,000,000 in flood damages along Cottonwood Creek and the Sacramento River.

° The Cottonwood Creek Project would supply approximately 200,000 acre-feet annually in new water supply. This is the amount of water needed to meet the requirements of approximately 800,000 people or approximately 70,000 acres of land to provide food for the nation. The State of California has made it abundantly clear that the continued prosperity and growth of the State is vitally dependent upon development of new water sources and conservation of waters otherwise wasted to the ocean.

° Unemployment in Shasta County has remained over the double-digit mark for many years and peaked at 19.7% in January of 1982. The project would provide much needed construction jobs and new permanent jobs associated with the operation of the reservoirs and the tourism generated by the project. This would give a timely boost to the sagging economy of Northern California.

° The Board of Supervisors is under continuing pressure to permit the development of the land in the proposed project area by dividing it into smaller parcels. If the land uses are to remain compatible with a project of this magnitude, it is imperative that studies leading to construction proceed as rapidly as possible so that the necessary rights of way can be purchased with the least disruption to private property owners. It is grossly unfair to the property owners in the project area to continue to live with the uncertainties related to the use of their property.

° The Cottonwood Creek Project has broad based support which includes those interests oriented to water development and those oriented to protecting the environment. The project enjoys a good benefit-cost ratio, and will provide benefits to the local area as well as to the State and the Nation. The project continues to be supported by the State administration and by the various counties

of Northern California, including the Northern California County Supervisors Association and the Superior California Water Association.

In closing, it is respectfully requested that you support the funding of the minimum capability of the Corps of Engineers to continue the Phase II Design Studies for the Cottonwood Creek Dams Project in Shasta and Tehama Counties in the amount of $500,000.

We appreciate the opportunity to provide these comments and to appear before your committee.

STATEMENT OF OAKDALE IRRIGATION DISTRICT, CALIFORNIA

The Oakdale Irrigation District appreciates the efforts of you and your committee for having obtained an appropriation of $6,200,000 for fiscal year 1985. The first year of construction on the system's rehabilitation project was recently completed and is now more efficiently irrigating 1,240 acres of land through 19 miles of new pipeline serving 1,098 constituents.

The rehabilitation project of our 75-year-old system from open ditch laterals to pipeline will result in conservation of 50,000 acre feet of water annually when the project is completed; 25 percent of which is immediately effective through the work completed. The piped system will also increase our ability to control water and provide better water management. This project is consistent with the President's philosophy and policy on cost sharing as follows:

Federal Loan -	$17,845,000
District Contribution -	4,244,000
Total Project Cost:	$22,089,000

The President's budget for the Bureau of Reclamation's loan program indicates $4.970 million for the Oakdale Irrigation District in fiscal year 1986. We support this appropriation as being within our capabilities to administer. The schedule for appropriations, including our current estimates for future appropriations, is summarized as follows (in $ million):

FY	84	- 1.500
FY	85	- 6.200
FY	86	- 4.970
FY	87	- 5.175
		$17.845

The SRPA program has enjoyed the support of Congress for over 25 years. The loans are repaid 100 percent, some with interest. The money is used for facilities that make possible the continued production of food and fiber, as well as the creation of permanent jobs. We respectfully request your active support of this bill to increase the existing ceiling of $600,000,000.

Your assistance and continued support for the completion of our project is greatly appreciated.

STATEMENT OF SONOMA COUNTY (CALIF.) WATER AGENCY

Mr. Chairman and Members of the Subcommittee -- I am Robert P. Beach, General Manager of the Sonoma County Water Agency (State of California). With me today is Nick Esposti, Fourth District Supervisor of Sonoma County. We urge that the subcommittee support the request for $16.6 million included in President Reagan's proposed budget for the Warm Springs Dam - Lake Sonoma Project in Sonoma County, California.

For the past twenty-four years we have annually represented to you our support for the Warm Springs Dam Project. We have recounted floods and droughts and described the benefits that would flow from the completion of this project. That day is now at hand. The U. S. Army Corps of Engineers closed the outlet works gates and began deliberate impoundment of water last November.

The construction work planned for next year, outlined in the attached table, consists primarily of implementation of a minimal recreation plan. The proposed recreation facilities included in the minimal recreation plan are only a fraction of those contemplated in the Lake Sonoma Master Plan. The prospect of these basic recreational facilities was clearly a major consideration in the decision to sponsor the project and in the subsequent referenda supporting the Warm Springs Dam Project. Failure to complete these facilities as proposed in the budget request would place the County of Sonoma in a most difficult position.

Between the Corps and the County, many millions of dollars have been spent to improve, realign or construct approximately 38 miles of road to and on the Warm Springs Dam recreational site. These roads provide excellent access to all parts of the lake. The availability of water and open public land will create a major attaction with excellent access within a short drive from most of the highly urbanized San Francisco Bay Area. The County currently can visualize no effective means of controlling this access. Consequently, major problems can be anticipated for the County that would result from the failure of the Corps and the federal government to fulfill previous understandings and obligations to provide satisfactory organized recreational facilities designed to accommodate the anticipated visitor traffic. A partial list of expected problems would include:

1. Inability to control individuals from entering undeveloped areas resulting in inappropriate camping, fishing and hunting, poor sanitation, high fire danger, and difficult evacuation in the event of illness or injury;

2. Environmental degradation of the area because of potential foot, animal, or vehicle traffic in areas not appropriately improved to handle this access;

3. Substantial and costly law enforcement requirements to attempt to control traffic and access to the area.

We appreciate the support the Warm Springs Dam Project has received from this subcommittee over the years and look forward with great anticipation to the full realization of the flood control, water supply and recreational benefits of the project.

DRY CREEK (WARM SPRINGS) LAKE & CHANNEL, CA

Proposed Application of Funds Requested for FISCAL YEAR 1986:

Construction Program:

Continue Buzzard Rock Reacreation and Warm Springs Beach Recreation Area	$6,905,000
Continue Rockpile Road Upgrade	4,000,000
Continue Vegetation Management Program	625,000
Initiate and complete downstream recreation	550,000
Initiate and complete fire service road	700,000
Initiate Lake Sonoma Beach Recreation Area	1,200,000
Engineering and Design	100,000
Supervision and Administration	720,000
Total	$14,800,000

Operation and Maintenance:

Operation of Dam and Facilities	$ 364,000
Recreation Management	635,000
Continuing Evaluation	76,000
Periodic Inspection	30,000
Water Control Management	122,000
Law Enforcement Contract	50,000
Fish Hatchery Operation	495,000
Total	$1,772,000

STATEMENT OF ORANGE COUNTY, CALIF.

Mr. Chairman and Committee members, I am Carl Nelson, Director of Public Works for Orange County. California. It is my privilege to appear before your committee to request appropriations for several projects which are urgently needed by California's second most populous county.

The Santa Ana River Basin and Orange County, California Project was authorized for study in 1964. Since that time the Orange County Flood Control District has expended approximately $155 million for flood channel improvements with no federal assistance other than FEMA reimbursements following declared emergencies in 1969, 1978, 1980, 1983.

The Orange County Board of Supervisors requests the support of your committees for the following described projects:

1. The Santa Ana River Main Stem Project - In 1970 the U. S. Army Corps of Engineers released a study identifying a flood storage deficiency in Prado Dam and Reservoir which was constructed by the Corps in 1941. A survey report was completed in 1975 and a Phase I General Design Memorandum was completed in 1980, indicating that the Santa Ana River poses the greatest flood damage threat in the western United States. The Corps has a tentative schedule for completion of the Phase II General Design Memorandum in 1988. In order to meet that schedule, the President's budget includes $4 million for engineering work in FY 1985-86 and we are pleased to request your support for the amount of the President's budget.

2. Interim Report III of the Santa Ana River Basin and Orange County, California authorization covers the west Orange County coastal tributaries where the local flood channel system was constructed to interim earthen standards by the Orange County Flood Control District entirely at local expense. The existing interim improvements were installed with the anticipation that in the future a reinforced concrete channel lining would be added to increase channel capacity as funds become available. Unfortunately, the leveed channels overflowed during the flood of March 1, 1983 with approximately $13.5 million in property damages. The Orange County Flood Control District independently initiated a $150,000 initial study effort which was followed by a $400,000 appropriation for Corps of Engineers work in FY 1984-85. We are pleased to note the inclusion of $350,000 in the President's budget for FY 1985-86 and request the support of your committee.

3. Sunset Harbor (Bolsa Chica) - Ocean access to Sunset Harbor (and a residential marina known as Huntington Harbour) is available only via a temporary arrangement with the U. S. Navy through its Anaheim Bay entrance to the Seal Beach Naval Weapons Station. A new ocean entry has long been proposed

to eliminate conflict with naval operations, improved navigation, improved title circulation to a State Department of Fish and Game environmental reserve, and to permit restoration of degraded wetlands area while developing additional residential marina capacity. Corps of Engineers cooperation in the development of an acceptable plan is a very important element of this project. An appropriation of $124,000 is requested in FY 1985-86 in order that the Corps may, in cooperation with local interests, complete a feasibility study authorized in 1964.

4. Coast of California study - Orange County's coastline (affectionately called "40 miles of happy smiles") was badly damaged by the storm surf and high tides of 1983, along with numerous California coastal areas. Orange County strongly supports a comprehensive rtudy by the U. S. Army Corps of Engineers and we are pleased to request your support of the President's budget in the amount of $1,500,000.

The Orange County Board of Supervisors has previously endorsed the concept of local cost-sharing in federal projects and requests your recognition that the cost of proceeding with these projects would be far less than the cost of not proceeding. All of the foregoing projects have as their goal the prevention of economic loss, all are expected to have favorable benefit cost ratios, have the support of local citizens, the State of California and the numerous agencies charged with environmental regulation. Thank you for the opportunity of presenting these very important needs on behalf of the citizens of Orange County, California.

Statement of Sacramento Valley Westside Canal Association

The Sacramento Valley Westside Canal Association supports and respectfully requests Fiscal Year 1985-86 appropriations for financing the following:

Item	Amount, $1,000
U.S. Bureau of Reclamation:	
Sacramento River Division	5,362
Loan Program:	
Colusa County Water District	3,467

The Sacramento Valley Westside Canal Association (Association) supports and respectfully requests Fiscal Year 1985-86 appropriations for financing the projects identified on the Association's Statement (enclosed).

The Association is disappointed that the U.S. Bureau of Reclamation (Bureau) has not budgeted any monies in Fiscal Year 1985-86 for the completion of the Tehama Colusa Canal Project, including the extension of the canal to Oat Reservoir, Oat Reservoir itself, and funding for the Yolo-Zamora Water District distribution facilities. The fact that the Bureau is considering selling "interim" Central Valley Project water to the California Department

of Water Resources for the State Water Contractors gives rise to concerns that the Tehama Colusa Canal Project may never be completed as planned, and that the opportunity to utilize water from the Central Valley Project, in the Sacramento Valley, will be foreclosed. Accordingly, the Association urges that funding for completion of the Tehama Colusa Canal Project be restored for Fiscal Year 1986-87.

Your attention and consideration of the Association's request is appreciated.

STATEMENT OF KERN COUNTY (CALIF.) BOARD OF SUPERVISORS

My name is Ben Austin. I am the Supervisor of the Second District of Kern County, California. I appear before you on behalf of the Kern County Board of Supervisors.

With us today are several other representatives of Kern County. Together, we hope to impress upon you the vital importance of continuing the current studies to find a permanent solution to critical flood problems of Caliente Creek in the Arvin-Lamont area of Kern County. While they will not addresss you at this time, they do want you to know that they are here. They are: L. Dale Mills, County Director of Public Works, and Terry L. Paxton, Civil Engineer, Drainage and Flood Control Division of County Public Works. In addition, we are privileged to include in our delegation, our consultant, Mr. Amalio Gomez.

Over the past year, Kern County, in cooperation with the Corps of Engineers, has made significant progress in the study of major aspects of our Caliente Creek flood problems. Study results are summarized in a consultant's technical report previously submitted to your technical staff by Mr. Stuart Pyle, Engineer-Manager of the Kern County Water Agency. The K.C.W.A. continues to serve admirably as lead agency on the project.

Our interest today, however, is in Fiscal Year 85-86 funding for the Corps of Engineers' Caliente Creek flood control feasibility study, which was initiated during the current fiscal year. The FY 85-86 appropriation we seek will fund the second phase of this projected three-year study.

The year 1985 should go down in Kern County annals as an

historic year. On February 1, the Kern County Water Agency signed a 50/50 cost-sharing agreement with the Corps of Engineers to continue the feasibility study.

That agreement commits Kern County to provide $200,000 per year for the study. Half of that amount is to be in cash, while the other half is to be in in-kind services. We are among the first -- and the few -- in the nation to enter into a cost-sharing agreement of this type with the Corps of Engineers.

The heartening and historic significance of this event lies in the fact that the members of the Caliente Creek Flood Control Task Force all agreed to participate in the cost-sharing agreement. That means that Kern County, the Kern County Water Agency, the City of Arvin, the Lamont Storm Water District, and the Arvin-Edison and Kern Delta Water Districts have all said they would share the burden of study costs.

Last year, when I appeared before this body, there was some question regarding project consensus. We firmly believe this demonstration of the spirit of working together for the common good will lay that question to rest finally and forever.

We further believe that our demonstration of willingness to share these burdens gives ample substance to our FY 85-86 request. The President's budget provides $140,000 for the study. We respectfully request that the Committee increase that figure to $250,000. This would be in accord with the capabilities of the Corps of Engineers, and would provide for some safety in the event the national requirement for local cost-sharing is less than fifty percent.

A solution to this problem of recurring flooding of the same area appears to be close. As has been demonstrated here, local interests have committed time and money to find that solution. The Kern County Flood Control Task Force has conducted preliminary economic studies and cost analyses that indicate a combination storage reservoir and flood channel project could be an

economically feasible solution. The Corps of Engineers has agreed with our findings.

In addition, we recently completed an engineering report on various configurations of the combination storage and channel project that will allow us to obtain local input and, ultimately, local support for a specific proposal. We have worked closely with the Corps in these efforts and have been very pleased with the high level of cooperation and support we have received from that organization in the past year.

Before closing, I would like to take a moment to express our deep appreciation for the hard work and moral support generously given us by Congressmen Bill Thomas and "Chip" Pashayan, by Senators Alan Cranston and Pete Wilson, and by each of you on the House and Senate Subcommittees. It was two years ago that our Kern County delegation appeared before you -- just weeks after a devastating flood that caused $25 million in damages and untold human misery. That historic flood of 1983 was preceded by another of equally devastating impact, both in human terms and in another $25 million in damages. Together, we have worked hard since to resolve that unacceptable condition. Together, we have seen this project go farther than ever before in actual accomplishment. Together, I believe we will see this much-needed project through to completion.

Thank you very much for your consideration.

STATEMENT OF ARVIN-EDISON WATER STORAGE DISTRICT, CALIFORNIA

THE ARVIN-EDISON WATER STORAGE DISTRICT SERVES 132,000 ACRES OF PRIME AGRICULTURAL LAND IN THE SOUTHEASTERN PORTION OF THE SAN JOAQUIN VALLEY. FLOOD RUNOFF FROM CALIENTE CREEK, WHICH HAS A DRAINAGE AREA OF ABOUT 480 SQUARE MILES AND ENTERS THE DISTRICT FROM THE NORTH, HAS CAUSED FLOOD DAMAGE TO AGRICULTURAL AND URBAN LANDS IN THE COMMUNITIES OF ARVIN AND

LAMONT ON MANY OCCASIONS SINCE DEVELOPMENT BEGAN IN THE AREA, THE MOST RECENT FLOODING OCCURRED IN MARCH OF 1983. IN THE SPRING OF 1978, FLOODING FROM THIS SOURCE CAUSED DAMAGE IN EXCESS OF $4 MILLION. REPAIR OF THE DAMAGE TO DISTRICT FACILITIES ALONE AS A RESULT OF FLOODING DURING MARCH OF 1983, WAS APPROXIMATELY $3.5 MILLION. IN ADDITION, APPROXIMATELY 7,500 ACRES OF FARMLAND WITHIN THE DISTRICT WERE FLOODED, THE LOSS OF CROPS AND RESTORATION OF THESE LANDS IS ESTIMATED TO BE ABOUT $7 MILLION.

THOSE APPEARING BEFORE YOU TODAY SEEKING FUNDS FOR THE CONTINUATION OF THE CORPS OF ENGINEERS CALIENTE CREEK STUDY ARE GRAVELY CONCERNED FOR THE FUTURE OF OUR COMMUNITY. DATA CONTAINED IN A U.S. CORPS OF ENGINEERS REPORT FLOOD CONTROL HYDROLOGY CALIENTE CREEK STREAM GROUP, CALIFORNIA AND LATER STUDIES REVEAL SOME FRIGHTENING STATISTICS WHICH INDICATE THAT THE RECENT CALIENTE CREEK FLOOD FLOWS AND RESULTANT DAMAGE TO AGRICULTURAL AND URBAN LANDS CAN BE EXCEEDED EIGHT FOLD. OF EVEN GREATER CONCERN IS THE VERY REAL POTENTIAL FOR THE LOSS OF AS MANY AS 26,000 ACRES OF AGRICULTURAL CROPS IN THE AREA IF THE ARVIN-EDISON WATER DISTRIBUTION SYSTEM IS TEMPORARY PUT OUT OF SERVICE AS A RESULT OF FLOOD DAMAGE. THE VALUE OF THESE CROPS COULD EXCEED $37 MILLION, AND DAMAGE TO CROPLAND AND TO THE COMMUNITIES OF ARVIN AND LAMONT COULD BE EVEN GREATER. IN ADDITION, THERE IS ALWAYS THE LOSS OF A SUBSTANTIAL NUMBER OF JOBS ASSOCIATED AS A RESULT OF SUCH A DISASTER.

CALIENTE CREEK FLOODING MUST BE CONTROLLED AND THE NEXT STEP IN THAT CONTROL IS THE FUNDING NECESSARY FOR CONTINUATION OF CORPS OF ENGINEERS STUDY.

THANK YOU FOR ALLOWING ME TO APPEAR BEFORE YOU TODAY.

STATEMENT OF VENTURA COUNTY (CALIF.) BOARD OF SUPERVISORS

My name is John K. Flynn. As a member of the Ventura County Board of Supervisors, I represent the County of Ventura and the Ventura County Flood Control District.

I am appearing today to urge your inclusion of $240,000 in the Corps of Engineers budget for the continuing General Investigation Survey of Calleguas Creek Watershed which was originally authorized by Congress in 1965. I am also here to urge your inclusion of $6,681,000 in the Bureau of Reclamation's budget for a PL 984 loan to the United Water Conservation District for the necessary construction of the Freeman Diversion project on the Santa Clara River. Both of these projects are in Ventura County, California.

The Oxnard Plain of Ventura County contains some of the the most valuable and productive farm land in the United States. It is used extensively for production of truck farm crops such as strawberries, celery, lettuce, broccoli and other high value food crops. Unfortunately, portions of this area are threatened with disaster either as a result of inundation by flood waters as occurred in 1978, 1980, and 1983, or as a result of groundwater supplies being damaged by intrusion with sea water. The two projects which I urge you to support deal with both of these threats.

Calleguas Creek has demonstrated its potential for damage in the three years referenced above when millions of dollars in damage were suffered by adjacent landowners and, in 1980, by Point Mugu, a significant Naval installation. These floods were of sufficient magnitude that disasters were declared at the Federal level. The damages from these floods have been reported to your Committee in prior years' testimony in support of the Calleguas Creek project.

The second threat, sea water intrusion, is equal to or greater than the flood threat. The Oxnard Plain, which has been farmed since the turn of the century, depends heavily on groundwater as the source of water for irrigation. Heavy use of irrigation wells has caused groundwater levels to decline which, in turn, has allowed salt water from the adjacent Pacific Ocean to intrude in excess of 20 square miles of the upper aquifer under the Oxnard Plain. The immediate effect of this underflow is an inability to continue the use of wells for a water supply which, in turn, has affected the urban and agricultural communities supplied thereby.

In recognition of this problem, the Board of Supervisors of Ventura County, the United Water Conservation District, and the State of California have developed a project to increase utilization of an alternate water supply, the Santa Clara River, and to decrease pumping of water from the affected aquifer. Ordinances are in effect that prohibit further pumping from the aquifer and pipelines, terminal reservoirs, and new wells have been constructed to provide water to the area. Local and state expenditures to date approximate $15 million.

The keystone of this project is the Freeman Diversion Structure, a concrete stabilizer to be constructed in the Santa Clara River, that will allow increased amounts of water to be diverted from that river to provide users an alternative water supply through the pipelines and to recharge the groundwater basin to halt and reverse the intrusion of salt water under the Oxnard Plain.

Provision of $6,681,000 in the Bureau of Reclamation's budget for a PL 984 loan to the United Water Conservation District will

enable expeditious and economical completion of this most important project.

I urge you to fund both projects in the amounts specified.

Thank you for allowing me to present this statement.

STATEMENT OF THE COLUSA COUNTY (CALIF.) WATER DISTRICT

I am Cloyde Emrick, Manager of the Colusa County Water District in the service area of the Tehama-Colusa Canal, Sacramento River Division of the Central Valley Project.

SUMMARY

The President's budget contains a Bureau of Reclamation item of $3,467,000 for the Water District's final year of construction of its agricultural water delivery system. We respectfully request your approval of this item.

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The President's budget contains appropriations of $3,467,000 in 1986 for funding a Public Law 84-130 loan program for the Colusa County Water District. The District is in Northern California and was formed in 1954 to receive water from the Tehama-Colusa Canal and distribute it to 40,000 acres of rich agricultural land. The Central Valley Project water augments the local groundwater supplies and is essential to achieve the full productivity of our farms.

The District is comprised of small family farms which have been handed down for generations; many pre-dating the accomplishments of the Central Valley Project. The Public Law 84-130 loan project will bring irrigation water to about 1/3 of our District; completing a distrubution system which was started in 1965.

Our landowners were faced with failing groundwater supplies and loss of large investments spent on development of their lands in expectation that water would be available soon from the Tehama-Colusa Canal. Additional water sales from the completed system will bolster repayment of the United States' investment in the Tehama-Colusa Canal and Central Valley Project along with contributing to the nations foreign exchange requirements through export of produce grown.

The people of our District greatly appreciate the assistance the Federal Reclamation Program provides and your Committee's past support in appropriating funds to complete the irrigation facilities.

STATEMENT OF RIVERSIDE COUNTY (CALIF.) FLOOD CONTROL AND WATER CONSERVATION DISTRICT

SUMMARY RECOMMENDATIONS

LAKE ELSINORE MANAGEMENT PROJECT	
(Bureau of Reclamation Loan Program)	$ 500,000.00
SANTA ANA RIVER - MAIN STEM	
Phase II Studies	$ 4,000,000.00
SANTA ANA RIVER AND ORANGE COUNTY	
Interim Report No. 2 $150,000.00	
Interim Report No. 3 350,000.00	$ 500,000.00

LAKE ELSINORE MANAGEMENT PROJECT
(Bureau of Reclamation Loan Program)

The Elsinore Valley Municipal Water District, the County of Riverside and the State of California, Department of Parks and Recreation, cooperated in the preparation of a study and report of the problems in stabilizing Lake Elsinore through flood control and water development improvements and enhancing the recreational opportunites of the lake under the provisions of the Small Reclamation Projects Act of 1956 (Public Law 84-984) as amended. The results of that study and report were that flood control improvements, water supply development, modification to operational size of the lake and recreational improvements were feasible with benefit-cost ratios exceeding 1.0 to 1.

The Elsinore Valley Municipal Water District, acting as the local sponsor, submitted the report entitled, Proposed Lake Elsinore Management Project, to the Bureau of Reclamation as an application for a loan and grant of $26,000,000 for this 39.5 million dollar project. The Secretary of Interior is anticipated to approve the loan and grant application by late March 1985.

The President did not include funds in the FY 1986 budget for this loan project. In order to move ahead with detailed planning and engineering for this important project we urge the Committee approve $500,000 for the Lake Elsinore Management Project loan in FY 1986.

SANTA ANA RIVER - MAIN STEM

The report of Santa Ana River - Main Stem, including Santiago Creek, California, Phase I, has been completed and the Chief of Engineers submitted that report to the Secretary of the Army. His report recommends construction of the All River Plan which consists of a dam near Mentone, California; enlargement of the

existing Prado Dam near Corona, California; channel improvements along the river in Orange County; improvement of the Oak Street drain channel in Corona, California; and improvement of Santiago Creek in Orange County. The All River Plan was developed over a period of several years of study by the Corps of Engineers and agreed to in concept by the three affected Counties, i.e., Orange, Riverside, and San Bernardino, and the State of California. Subsequent to completing the Phase I report on the Santa Ana River, All River Plan, certain interests in San Bernardino County expressed concerns over the Mentone Dam. The Boards of Supervisors of Orange, Riverside, and San Bernardino Counties, after meetings and discussions with the Corps of Engineers, have agreed on language authorizing the project, insuring that the concerns of the individual counties including the Mentone Dam concerns are addressed during the Phase II design studies.

The Santa Ana River Main Stem project is contained in Water Resources authorization bills now being considered by the Senate (S366) and House (HR6).

The Assistant Secretary of the Army, by letter of January 4, 1985, forwarded the report of the Chief of Engineers for the Santa Ana River Main Stem to the Speaker of the House requesting the Congress to authorize the lower two-thirds of the Santa Ana River Main Stem project, but excluding any flood storage facilities upstream of Prado Dam. This action will preclude the Corps of Engineers from proceeding to advanced engineering and design work on proposed upstream storage facilities. The Corps will complete feasibility studies in the summer of 1985 on an alternate upstream storage element and should continue advanced engineering studies on all elements of the All River Plan. We urge the Committee to direct the Corps of Engineers to continue detailed design activities in FY 1986 on all elements of the Santa Ana River flood control project, including the locally acceptable upstream project storage element, leading to completion of the Phase II General Design Memorandum. We support the President's budget of $4,000,000 for FY 1986.

SANTA ANA RIVER AND ORANGE COUNTY

The Corps of Engineers has been studying certain specific flooding problems along streams tributary to the Santa Ana River and in Orange County since the mid 1970's. For the past three years they have concentrated efforts on a study of the flooding problems around Lake Elsinore in Riverside County. The results of this study will be published later this year as Interim Report No. 4 on the Santa Ana River and Orange County.

There are also studies that must be completed on other streams in Orange County (Interim Report No. 3) and tributary streams to the Santa Ana River in Riverside and San Bernardino Counties (Interim Report No. 2). Included in Interim Report No. 2 are studies of the feasibility of extending the levee along the San Jacinto River approximately four miles farther downstream. Flooding has occurred along this reach of the river in 1978, 1979, 1980 and 1983 which required flood fight effort to keep the stream within the existing banks. The flood of February 1980 breached the local levees and caused extensive flooding damages to valuable agricultural land, closed major roads and highways, destroyed one major county road and caused considerable economic losses in the Hemet-San Jacinto Valley in Riverside County. Riverside County, including this area, is the fastest growing area in the United States. Future floods will cause even greater economic loss.

The Los Angeles District of the Corps of Engineers estimates it will take $150,000 to complete studies for Interim Report No. 2 for streams in Riverside and San Bernardino Counties and $350,000 to continue studies on streams in Orange County. We support funding these studies at these levels. The President's budget recommends only $350,000 for Santa Ana River and Orange County for FY 1986. We urge the Committee approve $500,000 for Santa Ana River and Orange County in FY 1986.

STATEMENT OF SAN JOAQUIN COUNTY AND SAN JOAQUIN COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

My name is Evelyn L. Costa. I am Chairman of the Board of Supervisors of the County of San Joaquin, California. I am accompanied by George L. Barber, Member of the Board. A resolution of the Board authorizing this presentation is attached.

In summary, the County of San Joaquin requests that the following appropriations be made to the Corps of Engineers and the Bureau of Reclamation for the fiscal year between October 1, 1985, and September 30, 1986, for projects of concern to the County:

Corps of Engineers - Construction

New Melones Project	$ 1,200,000
Aquatic Plant Control - San Joaquin River Delta	$ 140,000
Lower San Joaquin River Clearing and Snagging	$ 2,900,000

Bureau of Reclamation - Construction

Auburn Dam and Folsom South Canal	$ 3,500,000

Bureau of Reclamation - Loan Program

Oakdale Irrigation District Loan	$ 4,970,000

Bureau of Reclamation - Investigations

Delta Support Studies	1,100,000

DETAILED COMMENTS

Corps of Engineers - Construction

New Melones Project.....$1,200,000

The New Melones Dam, Reservoir, and Power Plant are complete for operational purposes and all State permits necessary to permit full, authorized operation are in the Bureau's hands. In both the last water year and in the current water year, the Project has provided flood control, fishery, water quality, and power benefits and these and irrigation benefits are assured for the future.

The President's budget provides $1,200,000 to advance construction of minimal recreation facilities in the reservoir area. We believe the full recreation facilities in the reservoir area and the access, recreational, and spawning-bed improvements in the lower river area, all as authorized, should be completed promptly so the Project can serve all its authorized purposes and can maximize its benefits.

Aquatic Plant Control-San Joaquin River Delta...$ 140,000

Substantial success has been achieved in controlling the massive water hyacinth blockage of Delta channels in and near the San Joaquin River arm of the Delta. These aquatic plants, which threatened to block all Delta channel navigation, should be completely eradicated.

Lower San Joaquin River Clearing and Snagging...$2,900,000

Much of the Lower San Joaquin River channel upstream of Mossdale has become choked with sediment and debris as a result of upstream erosion and past floods. The Corps had had available $5,000,000 to initiate channel clearing programs on the river system so that system can carry its designed flood flows without endangering adjacent properties. Approximately $2,900,000 of these funds are still available. Although the budget does not include funds for this essential work, we support the California Water Commission's recommendation that a $2,900,000 program be carried out.

Bureau of Reclamation - Construction

Auburn Dam and Folsom South Canal.....$3,500,000

The President's budget contains $3,500,000 for work in the Auburn Dam area in fiscal year 1985-86. Currently the Bureau of Reclamation and the Department of Water Resources, at the request of the Federal-State Task Force, are reviewing jointly the costs of the Project from a value-engineering standpoint. Preliminary reports by the Bureau indicate the authorized Project is economically justified when its physical facilities are modified in accordance with revised designs. Also, during the fiscal year, the Bureau will need to carry on discussions with the United States Forest Service, the State Department of Parks and Recreation and others. The water supplies which can be made available by Auburn Dam and Reservoir are essential to resolution of the minimum flow problems on the Lower American River and to the provision of water for use in the Folsom South Canal service area. Federal-State-local negotiations are proceeding on these latter matters.

The most important of the Auburn-related programs is Folsom South Canal, which now ends about 10 miles north of the San Joaquin County line. Currently San Joaquin County, through its Flood Control and Water Conservation District, is heading up a comprehensive groundwater management study of the portion of the County that would be served with water from the Canal. This study, utilizing some $400,000 in locally contributed funds, will enable the several districts within the area to plan on conjunctive use of groundwater in sustaining the presently developed agricultural area which is primarily in pasture, vineyard, row, and orchard crops.

The County believes that the Bureau should now be making studies parallel to those on Auburn Dam looking toward eventual extension of the Canal into the County to deliver supplemental water. Upon completion of the Environmental Impact Statement service area studies will be required in support of contracts for the supplemental water.

Bureau of Reclamation - Loan Program

Oakdale Irrigation District Loan.....$ 4,970,000

The Bureau and O.I.D. have executed their loan contract and construction is under way. The budgeted $4,970,000 in fiscal year 1985-86 will be used to continue construction on the system improvements. It is expected that when completed, the system will be far more efficient and will conserve much of the water now unavoidably lost.

Bureau of Reclamation - Investigations

Delta Support Studies.....$1,100,000

A wide variety of analyses and studies are required in the Sacramento-San Joaquin Delta in connection with existing and potential problems. Many of these programs involve cooperation with the State of California since both the State Water Project and the Federal Central Valley Project use the Delta as a means of conveying water across the Delta to their export pumping plants.

The State expends large sums in studying the effects of cross-Delta flows on water quality in the Delta and on export waters and in studying the effects of Project operations on fishery resources. The Bureau should have comparable funds with which to discharge its responsibilities toward the Delta.

We support the President's budget amount of $1,100,000 for these studies.

BEFORE THE BOARD OF SUPERVISORS OF THE SAN JOAQUIN COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, STATE OF CALIFORNIA

R-85-262

RESOLUTION APPROVING STATEMENTS TO BE SUBMITTED TO SUBCOMMITTEES ON ENERGY AND WATER DEVELOPMENT OF HOUSE OF REPRESENTATIVE AND SENATE APPROPRIATIONS COMMITTEES

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WHEREAS, the Subcommittee on Energy and Water Development of the Committee on Appropriations of the United States House of Representatives and the Subcommittee on Energy and Water Development of the Committee on Appropriations of the United States Senate will each separately hold hearings on March 28, 1985, on the budgets of the U. S. Army Corps of Engineers and the Bureau of Reclamation; and

WHEREAS, numerous projects contained in those budgets are of benefit to San Joaquin County;

NOW, THEREFORE, BE IT RESOLVED that Supervisors Evelyn L. Costa and George L. Barber are hereby authorized and directed to appear before the aforementioned congressional subcommittees in Washington, D. C., in support of the appropriations for pending flood control, navigation, and water supply projects which will be of benefit to San Joaquin County and to present the attached statements.

PASSED AND ADOPTED this 19th day of March, 1985, by the following vote of the Board of Supervisors, to wit:

STATEMENT OF CALIFORNIA CENTRAL VALLEYS FLOOD CONTROL ASSOCIATION

SUMMARY

This Statement urges augmentation or adjustments of the President's fiscal year 1986 budget as follows:

Corps of Engineers

General Investigations - Advanced Engineering and Design

Cottonwood Creek Dams

Shasta and Tehama Counties from $0 to 500,000

Lower San Joaquin River and Tributaries - Support Reprogramming of $2.9 million within budget

Mr. Chairman and Members of the Committee: I am Michael Catino, Manager of the California Central Valleys Flood Control Association (CCVFCA) and we appreciate the opportunity to come before you to present our recommendations for fiscal year 1986 appropriations.

The Association, which I represent, was organized in 1926, prior to any major State and Federal water and energy projects, and since that date has been a proponent of all of these developments in California. Seventy-five Reclamation, Levee Maintenance, and Flood Control Districts comprise its membership, located south from Red Bluff, California to Manteca, California, and containing 900,000 acres along the Sacramento and San Joaquin Rivers and Delta areas.

In most cases the Association supports the President's budget and others we seek augmentations or adjustments to satisfy the needs and priorities. All of the investigations and construction projects of our interests are authorized. Listed below are our recommendations with comparison to the President's budget and appropriate commentary.

CORPS OF ENGINEERS

General Investigations - Surveys

Dry Creek - Placer and Sacramento Counties

Total Federal Cost -	$825,000
President's budget -	$150,000
CCVFCA recommendation -	$150,000

This investigation of $825,000 is nearly one-half complete. The budget of $150,000 will provide engineering and environmental data to the potential drainage questions in northern Sacramento and western Placer Counties. The study area is being urbanized at a rapid rate due to the relocation of hi-tech industries. These developments along with the attendant homes, schools, shopping centers, offices, etc. significantly add to the existing drainage problems of Reclamation District No. 1000 and the hydrology of the Sacramento River.

General Investigations - Advanced Engineering and Designs

Cottonwood Creek Dams - Shasta and Tehama Counties

Total Federal Cost -	$20,900,000
President's budget	$ 0
CCVFCA recommendation	$ 500,000

Recommend the early completion of preconstruction planning and preparation of initial designs. This creek, unabated, continues to augment the Sacramento River flows and peril lowlands and the levee system. A cost-sharing proposal between the Corps of Engineers and the State of California has not developed. However, the work plans should continue simultaneously with these negotiations, in that various alternatives for construction are being considered.

Construction - General

Lower San Joaquin River and Tributaries

Total Federal Cost -	$5,600,000
President's budget -	$ 0
CCVFCA recommendation -	$2,900,000

This project's work program of dredging the river, rehabilitating the levees and structures was authorized in fiscal year 1984 with an appropriation of $750,000. It is estimated $2.65 million will be expended by the end of FY 1985. There is a capability of $2.9 million for FY 1986. These funds will be used for alleviation of flood damages to farm operations, seepage outside levees, and river bank erosion. Also, channel clearing, snagging and sediment removal to bring the San Joaquin River up to design capacities. Appropriate fish and wildlife mitigations are being considered.

Sacramento River - Major and Minor Tributaries

Total Federal Cost -	$11,900,000
President's budget -	$ 200,000
CCVFCA recommendation -	200,000

Support President's budget.

Sacramento River Bank Protection

Total Federal Cost -	$92,000,000
President's budget -	$ 3,500,000
CCVFCA recommendation	$ 3,500,000

This item provides for non-Federal sharing of $46 million. The State of California has budgeted funds for its share of this program. If these funds are not made available, the rehabilitation work will lag one and one-half to two years.

Sacramento River, Chico Landing to Red Bluff

Total Federal Cost -	$31,000,000
President's budget -	$2,500,000
CCVFCA recommendation	$2,500,000

At the end of FY 1985 expenditures will equal $12.3 million. Local entities provide rights-of-way, road relocations and operation and maintenance as their contribution. The President's budget is required to make continuing progress in the northern portion of the Sacramento River. Without this construction program, there will be continuation of bank and levee erosion and adjacent farm land and orchard losses.

Sacramento River Flood Control Project

Total Federal Cost - $75,525,000

President's budget - $ 250,000
CCVFCA recommendation - $ 250,000

These funds will be utilized to continue studies relative to levee subsidence at Cache Slough and Yolo Bypass. A design deficiency study on levee subsidence problems at Colusa Basin Drain and Knights Landing Ridge Cut is proposed under this program.

BUREAU OF RECLAMATION

Construction

Auburn - Folsom South Unit

President's budget - $3,500,000
CCVFCA recommendation - $3,500,000

Support the President's budget as a means to keep this $2.0 billion project active. The FY 1986 program is required to fund ongoing contracts and protection of work to date and government facilities. Reauthorization of the project is required to increase the indexed ceiling and additions. To date $328 million has been expended without any major returns on this investment. Flood control is required for the City and County of Sacramento. Auburn Dam will provide three times the protection now available by the existing Folsom Dam. Final designs on Auburn Dam should commence at the earliest date.

Miscellaneous Project Facilities

Delta Support Studies including Suisun Marsh

Presidents budget - $1,100,000
CCVFCA recommendation - $1,100,000

Support the President's budget.

STATEMENT OF VENTURA COUNTY AND VENTURA COUNTY FLOOD CONTROL DISTRICT, CALIFORNIA

Project: Calleguas Creek Watershed, Ventura, California

Action Requested: Inclusion of $240,000 in the Corps of Engineers' Federal Budget for FY 85-86 for Continuation of the Corps' General Investigation of the Calleguas Creek Watershed

Project: United Water Conservation District, Ventura, California

Action Requested: Inclusion of $6,681,000 in the Bureau of Reclamation's Federal Budget to be Loaned to the United Water Conservation District for Construction of the Freeman Diversion Project

My name is John K. Flynn. As a member of the Ventura County Board of Supervisors, I represent the County of Ventura and the Ventura County Flood Control District.

I am appearing today to urge your inclusion of $240,000 in the Corps of Engineers' budget for the continuing General Investigation Survey of Calleguas Creek Watershed which was originally authorized by Congress in 1965. I am also here to urge your inclusion of $6,681,000 in the Bureau of Reclamation's budget for a PL 984 loan to the United Water Conservation District for the necessary construction of the Freeman Diversion project on the Santa Clara River. Both of these projects are in Ventura County, California.

The Oxnard Plain of Ventura County contains some of the most valuable and productive farm land in the United States. It is used extensively for production of truck farm crops such as strawberries, celery, lettuce, broccoli and other high value food crops. Unfortunately, portions of this area are threatened with disaster either as a result of inundation by flood waters as occurred in 1978, 1980 and 1983, or as a result of ground water supplies being damaged by intrusion with sea water. The two projects which I urge you to support deal with both of these threats.

Calleguas Creek has demonstrated its potential for damage in the three years referenced above when millions of dollars in damage were suffered by adjacent landowners and, in 1980, by Point Mugu, a significant Naval installation. These floods were of sufficient magnitude that disasters were declared at the federal level. The damages from these floods have been reported to your Committee in prior years testimony in support of the Calleguas Creek project.

The second threat, sea water intrusion, is equal to or greater than the flood threat. The Oxnard Plain, which has been farmed since the turn of the century, depends heavily on ground water as the source of water for irrigation. Heavy use of irrigation wells has caused ground water levels to decline which, in turn, has allowed salt water from the adjacent Pacific Ocean to intrude in excess of 20 square miles of the upper aquifer under the Oxnard Plain. The immediate effect of this underflow is an inability to continue the use of wells for a water supply which, in turn, has affected the urban and agricultural communities supplied thereby.

In recognition of this problem, the Board of Supervisors of Ventura County, the United Water Conservation District, and the State of California have developed a project to increase utilization of an alternate water supply, the Santa Clara River, and to decrease pumping of water from the affected aquifer. Ordinances are in effect that prohibit further pumping from the aquifer and pipelines, terminal reservoirs, and new wells have been constructed to provide water to the area. Local and state expenditures to date approximate $15 million.

The keystone of this project is the Freeman Diversion Structure, a concrete stabilizer to be constructed in the Santa Clara River, that will allow increased amounts of water to be diverted from that river to provide users an alternative water supply through the pipelines and to recharge the ground water

basin to halt and reverse the intrusion of salt water under the Oxnard Plain.

Provision of $6,681,000 in the Bureau of Reclamation's budget for a PL 984 loan to the United Water Conservation District will enable expeditious and economical completion of this most important project.

I urge you to fund both projects in the amounts specified.

Thank you for allowing me to present this statement.

STATEMENT OF MID-VALLEY WATER AUTHORITY, CALIFORNIA

My name is George D. McKean and I am Chairman of the Board of Directors of the Mid-Valley Water Authority. I am appearing today in support of the U.S. Bureau of Reclamation's Feasibility Investigation line item entitled San Joaquin Valley Conveyance Study with a 1985-86 budgeted allocation of $743,000.

SUMMARY

The Mid-Valley Water Authority (MVWA), a Joint Exercise of Powers Agency, consisting of 29 public agencies in six counties of the San Joaquin Valley, California, was formed December 3, 1982. The service area of the MVWA covers approximately 3.4 million acres of irrigated agriculture, and has a long-term groundwater overdraft of 1.5 million acre-feet per year.

The Bureau of Reclamation has identified unallocated firm CVP water as a result of the Coordinated Operations Agreement with the State Department of Water Resources (DWR), operations of the Trinity River, interim CVP water available from non-use of allocations under existing contracts, and additional surplus CVP water of approximately 1.7 million acre-feet per year, a portion of which will be subject to contractual negotiations with the MVWA upon the removal of the moritorium, as imposed by former Secretary of Interior Andrus, of further contracts for delivery of water from the Delta.

The President's Budget for fiscal year 1985-86 provides sufficient funds to complete the planning study for determining the most economical routing of the Mid-Valley Canal which is needed to deliver additional supplemental water supplies to the service area of the MVWA and thereby help to resolve the groundwater overdraft of that area.

The MVWA anticipates that the appropriation of construction funds for the Mid-Valley Canal will be included in the fiscal year 1986-87 budget.

ORGANIZATION

The Mid-Valley Water Authority was organized under the Joint Exercise of Powers Act, Articles I and II of Chapter 5 of Division 7, Title 1 of the Government Code of the State of California (Section 6500 et seq.) on December 3, 1982. The public districts, which are members of the MVWA and their percentage of participation therein, are set forth in Table 1.

Each of the 29 public agencies is represented by a director and alternate on the Board of Directors and on an Advisory Committee. The MVWA was organized as an institutional device for the continuation and coordination of the various efforts that have been independently pursued by the member agencies to secure a supplemental water supply and the construction of a conveyance facility for the delivery of the supplemental water supply to the MVWA service area.

SERVICE AREA

The MVWA includes a service area of approximately 3.4 million acres of irrigated agricultural lands. The boundary of the MVWA extends from the Merced County line on the north to the southerly boundary of the Arvin-Edison Water Storage District on the south, and generally from the Sierra foothills to the trough of the San Joaquin Valley.

Lands within the Counties of Madera, Merced, Fresno, Kings, Tulare and Kern are of membership in the MVWA. A map of the MVWA service area is included as Plate 1.

HISTORY

The lands included within the Mid-Valley Water Authority are, for the most part, lands which are presently under cultivation and indeed, these areas were some of the earliest extensively irrigated lands in the State.[1] While the service area of the Mid-Valley Water Authority was included within the planning for the integrated operation of the Central Valley Project, the construction of a delivery facility (Mid-Valley Canal) has not been accomplished. Studies for the development of the East Side Division of the Central Valley Project proceeded through the late 1950's and early 1960's and a proposed feasibility report for the East Side Division, Initial Phase, was sent to the Secretary of the Interior in 1968.[2] As the overall imbalance between the available water supplies and the consumptive demands became more and more apparent, the member agencies independently persisted in their efforts to urge the federal and state governments to proceed with the development of a delivery capability for the Central Valley Project waters that were and are available in the Delta to the area now included within the Mid-Valley Water Authority. As a result of these efforts, the State Department of Water Resources and the U.S. Bureau of Reclamation jointly studied the construction of a Mid-Valley Canal which would incorporate features of the State Water Project and the Delta Mendota Canal of the CVP. Those studies culminated in the publication of a report entitled "Mid-Valley Canal, East Side Division, Central Valley Project, California, 'A report on the Mid-Valley Canal Feasibility Investigation' U.S. Department of the Interior". (January, 1981). The Report contained an extensive consideration of the needs within the proposed service area and the hydrologic, environmental and economic considerations of constructing the proposed facility as a federal facility. In conjunction with that report, tentative allocations of the available CVP water supply were made among the various agencies that were seeking to participate, those allocations being predicted upon criteria developed by the Bureau of Reclamation.

When the study for the Mid-Valley Canal was commenced, the Bureau of Reclamation had identified a firm annual water supply in the Delta of approximately 500,000 acre-feet as available for export to the proposed service area. Before the report could be completed, the Bureau of Reclamation revised its estimations of the marketable CVP yield in light of Delta water quality considerations.[3] In view of these revised yield calculations,

the report proposed that there be no federal action for Congressional authorization of the Mid-Valley Canal until a firm water supply is available. The report does conclude, however, that the Mid-Valley Canal service area should be considered as an area to utilize any additional yield originating from existing CVP facilities.

While the Mid-Valley Canal that was the subject of the aforesaid feasibility investigation has not been authorized for construction, the residents and public agencies within its projected service area have proceeded with the formation of the Mid-Valley Water Authority to promote its purposes. The geographic configuration of this authority as well as the participation percentages of the various member agencies were developed in substantial reliance upon the service area and allocation criteria used by the Bureau of Reclamation in its feasibility study. The Authority was organized to continue the search for a reliable water supply for the east side of the San Joaquin Valley.

The lands included within the Mid-Valley Water Authority are among the most severely overdrafted agricultural lands in the State. The Mid-Valley Canal feasibility investigation identified an estimated 1.5 million acre-feet annual groundwater overdraft.

The California State Department of Water Resources in Bulletin 118-80, identified eight basins as being subject to critical conditions of overdraft in the San Joaquin hydrologic study area. Seven of those basins, the Chowchilla, Madera, Kings, Kaweah, Tulare Lake, Tule and Kern County basins essentially make up the service area of the present Mid-Valley Water Authority. Those basins were identified by DWR as having a long-term annual overdraft of 1,339,000 acre-feet.

In identifying the needs within the Mid-Valley Canal service area, the U.S. Bureau of Reclamation concluded that the local surface supplies have been almost completely utilized and cannot realistically meet the demand. In addition, the report notes that overall basin irrigation efficiency is very high and conservation gains would likewise be of no consequence toward correcting the overdraft. The Mid-Valley feasibility report concluded in pertinent part as follows:

> "A replacement water supply for the Mid-Valley Canal general service area is urgently needed. The present annual groundwater overdraft of over 1 million acre-feet forecasts the abandonment of over 440,000 acres of highly productive irrigated agricultural lands within the foreseeable future unless a replacement supply can be imported."

Under the Coordinated Operations Agreement (COA) being developed between the U.S. Bureau of Reclamation and the California State Department of Water Resources, a remaining uncommitted CVP yield was identified in the amount of 1.1 million acre-feet per year. Additional CVP water is also anticipated to be available from the modified Trinity River operations and on an interim basis (interim water is defined as existing firm yield under contract but not as yet used).

The MVWA is further supporting the construction of the Auburn Dam project, and intends to become a cost sharing participant and a recipient of a portion of the project yield.

Thus, with an appropriate conveyance facility, the MVWA would be capable of importing nearly 1-million acre-feet of additional supplemental water supply to the MVWA service area.

PURPOSE

The Bureau of Reclamation and the MVWA entered into a "Letter of Intent for the Funding and Conduct of Studies to Resolve Groundwater Overdraft and Meet the Water Needs in the San Joaquin Valley" and an "Agreement Between the United States of America and Mid-Valley Water Authority Providing for the Funding of Certain Studies Pertinent to the Provision of Supplemental Water Supplies for the San Joaquin Valley" in November 1983 for determining the most feasible method of importing additional surface water supplies needed to offset the groundwater overdraft within the MVWA service area. The MVWA is cost-sharing the studies by contributing funds and by providing in-kind services. The Bureau, State, DWR and the MVWA are initially jointly studying the capability of all existing facilities for delivery of additional CVP water within the MVWA service area.

The San Joaquin Valley Conveyance Study will further evaluate potential canals and necessary pumping plants along alternative conveyance r utes, consider the integration of off-stream water conservation storage reservoirs of various sizes, and evaluate other facilities needed to resolve the groundwater overdraft and related problems in the service area, including drainage, erosion and sedimentation, flooding and fish and wildlife deterioration.

It is anticipated the Bureau of Reclamation costs for their portion of the cost-sharing feasibility study will be 1.1 million dollars and an allocation within the 1985-86 budget of $743,000 is required to complete the Conveyance Study.

I appreciate the privilege of appearing before the Committee and respectively urge y ur support and ask that my statement be made a part of the hearing record.

[1]Central Valley Project Documents Part 1, Authorizing Documents, 84th Congress 2nd Session House Document #416 (1956) Intro. pp I-16.

[2]East Side Division, Initial Phase, Central Valley Project California "A Report on the Feasibility of Water Supply Development". U.S. Department of the Interior, Bureau of Reclamation (December 1965 Rev. June 1966).

[3]Mid-Valley Canal Feasibility Study, p. 66.

TABLE 1

MEMBERSHIP COMPOSITION OF MID VALLEY WATER AUTHORITY

Member Agency	Participation %
Alpaugh Irrigation District	1.44
Alta Irrigation District	1.84
Atwell Island Water District	1.23
Chowchilla Water District	0.62
City of Corcoran	0.62
Clayton Water District	0.62
Consolidated Irrigation District	3.27
County of Fresno	7.15
Fresno Irrigation District	2.05
Gravelly Ford Water District	0.52
City of Hanford	1.44
James Irrigation District	0.92
Kaweah Delta Water Conservation District	7.15
Kern County Water Agency	7.15
County of Kings	4.09
Kings County Water District	7.15
Kings River Conservation District	7.15
Labranza Water District	1.23
Lakeside Irrigation Water District	1.84
Liberty Water District	1.23
Lower Tule River Irrigation District	4.09
Madera County Flood Control & Water Conservation Agency	7.15
Madera Irrigation District	3.27
Pixley Irrigation District	7.15
Raisin City Water District	7.15
Saucelito Irrigation District	1.44
Sierra Water District	2.25
County of Tulare	7.15
Tulare Irrigation District	1.64
	100.00

43-681 O - 86 - 28

STATEMENT OF EAST BAY (CALIF.) MUNICIPAL UTILITY DISTRICT

The East Bay Municipal Utility District, which supplies water for municipal and industrial uses to 1.1 million people in a 300-square-mile area of Alameda and Contra Costa Counties on the eastern side of San Francisco Bay, supports the California Water Commission's recommendations regarding appropriations for Federal Flood Control and Reclamation Programs in California for fiscal year 1985-86.

Specifically, the District urges appropriation for the following project (reference California Water Commission Summary dated February 15, 1985).

No. 47 Auburn-Folsom South Unit $3,500,000

The District has a twofold interest in the completion of the Auburn-Folsom South Project: first, as a contractor for project water; and second, as an indirect beneficiary of water imported to that portion of the Folsom South service area which lies downstream from the District's primary water source reservoirs in the Mokelumne River basin.

Extensive groundwater pumping in the vicinity of the lower Mokelumne River is causing substantial seepage loss, much of which must be replaced by releases of water stored by East Bay Municipal Utility District for its own use. As these seepage losses increase, the dependable yield of the District's Mokelumne River Project is reduced proportionately. Since the Mokelumne River Project supplies more than 90 percent of the District's water, the project yield is of major concern.

For more than twenty years, the expected solution to this problem has been an imported surface supply from the Auburn-Folsom South Project. The agricultural interests along the lower Mokelumne River have also looked to this project to meet their long-term water requirements. Currently the District provides storage, on an interim basis, to these agricultural interests. Without the Auburn-Folsom South Project, their water requirements will eventually have to be met from groundwater. Since the groundwater basin is already classified as critical, increased pumping on that basin can only result in accelerated decline in the groundwater table. This consequence could prove disastrous to agriculture and the local communities.

In an effort to ensure the timely completion of the Auburn-Folsom South Unit of the Central Valley Project, the District's Directors have expressed an interest in participating in the construction of the power function of Auburn Dam and extension of the Folsom South Canal (EBMUD Board Resolution 30324, August 10, 1982).

The District is currently cooperating with San Joaquin County interests in the implementation of a groundwater study which will provide information as to the best supply from the Folsom South Canal.

For the above reasons, East Bay Municipal Utility District seeks your Committee's support for this project.

STATEMENT OF RIVERSIDE COUNTY (CALIF.) FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Dear Senator Hatfield: Re: Santa Ana River Project

I am transmitting herewith Resolution F85-15 which was approved by the Board of Supervisors of Riverside County, also acting as the governing board of the Riverside County Flood Control and Water Conservation District on March 12, 1985.

The substance of the resolution insofar as your subcommittee is concerned is the directing of the Corps of Engineers to continue detailed design activities in Fiscal Year 1986 on all elements of the Santa Ana River Project, including the locally acceptable upstream project element. All of this work would be done within the limits of the President's budget of $4 million for Fiscal Year 1986. We are not asking for any additional funding at this time. The resolution speaks to the issue as to why we are asking for this direction by the Appropriations Committees.

Your support in providing that direction will be appreciated.

Very truly yours,

Walt Abraham

WALT ABRAHAM
Chairman, Board of Supervisors

Attachment

Board of Supervisors — Riverside County Flood Control and Water Conservation District

RESOLUTION IN SUPPORT OF AUTHORIZATION OF
THE SANTA ANA RIVER MAIN STEM PROJECT "ALL RIVER PLAN"

RESOLUTION NO. F 85-15

WHEREAS, the Boards of Supervisors of Orange, Riverside and San Bernardino Counties have for several years expressed unified support for the "All River Plan" alternative for the Santa Ana River Main Stem Project in accordance with the recommendations of the Chief of Engineers of the United States Army Corps of Engineers; and

WHEREAS, the Boards of Supervisors of all three counties have previously adopted resolutions endorsing specific language for congressional bills authorizing construction of the Santa Ana River Main Stem Project; and

WHEREAS, Congressman Robert A. Roe has now introduced H.R. 6 into the 99th Congress including authorization for the Santa Ana

River "All River Plan" with language substantially in accordance with that requested by the Boards of Supervisors of Orange, Riverside and San Bernardino Counties; and

WHEREAS, the Assistant Secretary of the Army, by letter of January 4, 1985, has forwarded the report of the Chief of Engineers for the Santa Ana River Main Stem Project to the Speaker of the House of Representatives requesting the Congress to authorize the Santa Ana River Main Stem Project with language that deviates from the language of H.R. 6; and

WHEREAS, until the Congress adopts an authorization bill for the Santa Ana River Main Stem Project "All River Plan", the action of the Assistant Secretary of the Army would preclude continued engineering work in the analysis of alternative reservoir sites upstream from Prado Dam and Reservoir.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Riverside County, also acting as the governing board of the Riverside County Flood Control and Water Conservation District, in regular session assembled on March 12, 1985, hereby supports the language of H.R. 6.

BE IT FURTHER RESOLVED that this Board does hereby endorse and support the recommended budget of the President of the United States, and requests the Congress to appropriate in FY 1985/86 the amount of four million dollars ($4,000,000) and further requests Congress to direct the Corps of Engineers to continue detailed design activities in FY 1986 on all elements of the Santa Ana River flood control project, including the locally acceptable upstream project element, leading to completion of the Phase II General Design Memorandum.

BE IT FURTHER RESOLVED that this resolution be transmitted to the Honorable Mark O. Hatfield, Chairman, Senate Committee on Appropriations, Subcommittee on Energy and Water Development; the Honorable Robert T. Stafford, Chairman, Senate Committee on Environment and Public Works; the Honorable James Abdnor, Chair-

man, Senate Committee on Environment and Public Works, Subcommittee on Water Resources; the Honorable Robert A. Roe, Chairman, House Committee on Public Works and Transportation, Subcommittee on Water Resources; the Honorable Tom Bevill, Chairman, House Committee on Appropriations, Subcommittee on Energy and Water Development; and to Riverside County's representatives in Congress: the Honorable Senator Alan Cranston; the Honorable Senator Pete Wilson; the Honorable A. A. McCandless; and the Honorable George E. Brown, Jr.

Roll Call resulted as follows:

Ayes: DUNLAP, CENICEROS, LARSON, YOUNGLOVE AND ABRAHAM
Noes: NONE
Absent: NONE

Transmitted herewith is Resolution F85-16 approved by the Board of Supervisors of Riverside County, also acting as the governing board of the Riverside County Flood Control and Water Conservation District, on March 12, 1985.

This resolution supports the loan and grant application request of the Elsinore Valley Municipal Water District for the Lake Elsinore Management Project under the provisions of the Small Reclamation Projects Act of 1956, Public Law 84-984 and the appropriation of $500,000 in Fiscal Year 1986 to initiate the Lake Elsinore Management Project. The Secretary of Interior is expected to act on the loan application request in the very near future to approve the application. The President did not include any funds in Fiscal Year 1986 for this loan project. We urge your support in including $500,000 to be able to initiate engineering and design work on the project. The total amount of the loan application is $26 million.

Lake Elsinore, commencing with the floods of 1980, has suffered extensive damages from flooding and will continue to be vulnerable to flooding threats until this project can be implemented. Your consideration of this request will be sincerely appreciated.

Board of Supervisors

Riverside County Flood Control and Water Conservation District

RESOLUTION IN SUPPORT OF THE PROPOSED
LAKE ELSINORE MANAGEMENT PROJECT

WHEREAS, the Elsinore Valley Municipal Water District (District), the County of Riverside (County), and the State of California, Department of Parks and Recreation (State), cooperated in the preparation of a study and report of the problems in

stabilizing Lake Elsinore through flood control and water development improvements and enhancing the recreational opportunities of the lake under the provisions of the Small Reclamation Projects Act of 1956 (Public Law 84-984) as amended; and

WHEREAS, the findings of the study and report found that flood control improvements, water supply development, modification to the operational size of the lake, and recreational improvements are all feasible with benefit - cost ratios exceeding 1.0 to 1; and

WHEREAS, the District has, acting as the local sponsoring agency, submitted a report entitled, Proposed Lake Elsinore Management Project, to the Regional Director of the Bureau of Reclamation in Boulder City, Nevada, applying for a loan and grant of $26,000,000; and

WHEREAS, the Regional Director has forwarded the report to the Commissioner of Reclamation, recommending approval of the District's loan grant application in the amount of $26,000,000, under the provisions of the Small Reclamation Projects Act of 1956 (Public Law 84-984) as amended; and

WHEREAS, the President's budget for FY 86 does not contain an appropriation for the District's project loan; and

WHEREAS, it is vital to move this project into the design and construction stages as early as possible.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Riverside County, also acting as the governing Board of the Riverside County Flood Control and Water Conservation District, in regular session assembled on March 12, 1985, supports the loan and grant application request of the Elsinore Valley Municipal Water District for the Lake Elsinore Management Project and urges that the Secretary of the Interior approve the loan and grant application.

BE IT FURTHER RESOLVED that the Board does hereby endorse and support the appropriation of $500,000 for FY 86 to initiate the Lake Elsinore Management Project.

BE IT FURTHER RESOLVED that this resolution be transmitted to the Honorable Mark O. Hatfield, Chairman, Senate Committee on Appropriations, Subcommittee on Energy and Water Development; the Honorable Tom Bevill, Chairman, House Committee on Appropriations, Subcommittee on Energy and Water Development; Riverside County's representatives in Congress: the Honorable Senator Alan Cranston; the Honorable Senator Pete Wilson; the Honorable A. A. McCandless, the Honorable George E. Brown, Jr.; and the Honorable Donald P. Hodel, Secretary of the Interior.

Roll Call resulted as follow:
Ayes: DUNLAP, CENICEROS, YOUNGLOVE, LARSON AND ABRAHAM
Noes: NONE
Absent: NONE

STATEMENT OF LINDA COUNTY (CALIF.) WATER DISTRICT

The Yuba County Water Agency's completed application for a PL84-984 Loan to build the long needed South County Irrigation Project was forwarded to the Commissioner of the Bureau of Reclamation in February 1981. A reduction in the number of member units from seven to five necessitated an amended application dated February 1984. This amended application is now completed. The Linda County Water District, as the second largest contracting entity, urges your committee to approve the application for the Yuba County Water Agency.

The Presidents proposed budget for fiscal year 1985/86 includes $ 8,400,000. This amount is recommended in the application report and will permit the completion of the project in accordance with the proposed schedule.

The project appears to be consistent with several national goals:

1. All of the Federal funds will be repaid directly from the project revenues.

2. The jobs provided during the construction period will provide significant benefits to Northern California's depressed economy.

3. Residential and industry in the area served by the project is threatened with drastic reduction because ground water supplies continue to decline at an ever increasing rate. The completed project will assure continued long term economic stability of the area by providing a new and reliable source of water.

The project is described in more detail in the following paragraphs:

Proposals to provide Yuba River water to southern Yuba County were developed as early as 1954. A diversion dam and canal system were included as part of the Agency's New Bullards Bar Project, which began operation in 1969. However, lack of available funds caused deletion of the South Irrigation facilities from the first stage hydroelectric and irrigation

project. The Agency still holds the permits for the South County project water which will be supplied from storage in New Bullards Bar Reservoir.

The 44,000 acre feet of irrigation water that will be provided annually by this project is only sufficient to balance the present overdraft which now occurs. The reduced use of pumps will save many million kilowatt hours of engergy per year.

Ground water levels have dropped nearly eighty feet during the past sixty years. Current overdrafts result in lowering ground water levels an average of more than four feet per year. If the rapidly declining supply of ground water is not replaced with surface water, production of agricultural products must be curtailed, also growth of Residential and industrial in Linda County Water District.

An additional 12,200 acre feet will also become available for domestic use at Beale Air Force Base and to three nearby developed communities having a combined total permanent population of 36,000. The available water from the project to Linda County Water District is 5,000 acre feet which will enable us to meet present and future growth.

The City of Wheatland, Olivehurst Public Utility District and the Linda County Water District are now experiencing ground water quality and quanity problems.

The P1984 project will include mitigation measures to compensate for the loss of fish and wildlife habitat.

A summary of the most important features of the project are listed below:

1. Diversion structure at the Yuba River, consisting of an inlet structure, pipeline and fish screen/return system.

2. Concrete lined 350 cfs, 5.7 mile main canal from the diversion structure to the north boundary of Beale Air Force Base. Pipeline from turn out at this Point to serve Linda County Water District.

3. Concrete lined 300cfs, 9.2 mile Beale canal across Beale Air Force Base. This Canal would serve the Wheatland Water District.

4. Approximately 56 miles of distribution system canals to serve a new area of about 16,500 acres.

5. A 500-Kilowatt hydroelectric generation unit located at the pipe drop turnout to the Wheatland Water District distribution systems.

The California Water Commission unanimously supported the project which is scheduled to be funded as follows:

Fiscal Year 1986	$	8,400,000
Fiscal Year 1987	$	10,100.000

The Yuba County Water Agency has acknowledged its obligation to raise its matching share of the funds, $ 4,600,000 and we respectfully request formal action by your Sub-Committee to authorize the Federal appropriations.

STATEMENT OF THE KERN COUNTY (CALIF.) WATER AGENCY

My name is Robert McCarthy, President of the Board of Directors of the Kern County Water Agency in Bakersfield, California. The Agency's interest today is in Fiscal Year 85-86 funding for the Corps of Engineers' Caliente Creek flood control feasibility study, which was initiated during the current fiscal year. The FY 85-86 appropriation we are seeking will fund the second phase of the three-year study.

On February 1, the Agency signed a 50-50 cost-sharing agreement with the Corps for the study. The agreement commits the Agency to providing $200,000 -- half in cash, half in in-kind services -- per year for the study. We are among the first and the few in the nation to actually sign a cost-sharing agreement of this type with the Federal Government. The President's Budget provides $140,000 for the study -- $60,000 short of matching our $200,000 cost-sharing agreement. We understand that the Corps' FY 85-86 capability is actually $250,000, and respectfully request the Committee to consider increasing the President's Budget to that amount. At the very minimum, we would like the budget to match the $200,000 we have committed in our 50-50 cost-sharing agreement with the Corps.

I would like to take this opportunity to thank you for the support you have given to the Caliente Creek project in the last few years. It was only two years ago that Agency and other Kern County representatives appeared before you just weeks after one of the worst floods ever experienced on Caliente Creek that caused $25 million in damages. That historic flood of 1983 was preceded by the historic flood of 1978, which also caused $25 million in damages. A solution to this recurring flooding problem must be found, and local interests have committed time and financial resources to find that solution. The Caliente Creek Flood Control Task Force has conducted preliminary economic studies and cost analyses that indicate a combination storage reservoir and flood channel project would be an economically feasible solution, and the Corps has agreed with our findings. In addition, we recently completed an engineering report on various configurations of the combination storage and channel project that we will be able to use to obtain local input on the various channel options and to develop local support for a specific proposal. We have worked closely with the Corps in these efforts, and have

been very pleased with the level of cooperation and support we have received from the Corps in the last year.

The funds you have obtained for us the last two years have enabled this important project to move ahead. These are hard times economically, and no one, least of all Kern County's agriculturally-based constituents, would invest the kind of money we have committed without sound economic justification. We urge your continued support and look forward to realizing a final solution to the Caliente flooding problem with your help.

Statement of Kaweah Delta Water Conservation District, California

In 1983 the Corps of Engineers, Sacramento District, initiated a Reconnaissance Level Study of the feasability of increased storage for the Kaweah River System. This study will not be completed in fiscal year 1985 and the President's Proposed Budget does not include any funding for fiscal year 1986.

In fiscal year 1986, it is estimated that $285,000 is needed to complete the study.

The California Reclamation Board is presently doing a Floodway Designation Study of the Kaweah River System. The Board, on February 22nd, recommended that Congress appropriate the $285,000 as an "add-on" to complete the Study.

On March 1, the California Water Commission also recommended the Fiscal Year 1986 Budget include money to conclude the Corps study.

In the past 16 years, the urban area in the Kaweah Delta Water Conservation District has increased from 11,000 to 22,000 acres. This is a 100% increase in urban acreage. How do you calculate the flood damage potential from this increase?

The potential flooding of agricultural land remains a constant threat. As these lands become saturated with 1 - 5 acre "farms" the damage estimates rise drastically.

In light of the potential flooding of both urban and agricultural lands in both Tulare and Kings Counties, we ask that you please consider $285,000 as an "add-on" to complete the Corps of Engineers Study of Additional Storage on the Kaweah River system.

STATEMENT OF SAN FELIPE COMMITTEE

SUMMARY

The San Felipe Committee supports the President's Budget Figure as the FY 1985-86 appropriation for continued construction, San Felipe Division, CVP, in the total sum of Thirty-Seven Million, Five Hundred Ninety-Seven Thousand Dollars ($37,597,000).

My name is Albert Henley. I am an attorney. Today I represent before you a public agency which has been for many years the principal proponent of the San Felipe Division of the Central Valley Project.

The Committee will be fully familiar with the facts concerning this important public work. I have often assured you that the project is needed, is locally supported and is a wise and beneficial investment of federal funds. I repeat those assurances -- certain that your own information from Bureau of Reclamation testimony and the statements of your colleagues will have been to the same effect.

As the time for completion of San Felipe draws near I am able to take less and less of your time in exposition. I prefer, today, to bring you the respectful greetings of the people who will be buying federal water and repaying the federal cost. Prospering through the San Felipe supply, they will be better able to pay their taxes. It can happen -- and will happen in this case -- that with a well-considered federal project, everyone is benefited.

This agency, the San Felipe Committee, is ending its existence as of June 30, 1985. We consider that our work is essentially done.

I repeat our thanks and express appreciation of your understanding and invariable courtesy.

STATEMENT OF ELSINORE VALLEY MUNICIPAL WATER DISTRICT, CALIFORNIA

PROJECT SUMMARY
LAKE ELSINORE MANAGEMENT PROJECT

(Project submitted to the Department of Interior, Bureau of Reclamation for Loan under P.L. 84-984 Small Reclamation Projects Act).

LOCATION

The Elsinore Valley Municipal Water District (EVMWD) is located within the Elsinore Valley in southwestern Riverside County approximately 60 miles southeast of the City of Los Angeles, California.

ORGANIZATION

EVMWD was legally organized in 1950 under provisions of the California Municipal Water District Act of 1911. The purposes of the District are to finance, construct, operate and maintain a water system within District boundaries. The District has authority to execute a contract with the United States for repayment of the loan, has the power of eminent domain and to levy ad valorem taxes. The District is also legally empowered to construct, operate, and maintain public recreational facilities; to acquire, construct, operate and maintain sewage, waste, and storm water disposal facilities; and to acquire, construct, operate and maintain fire protection facilities.

PROJECT DESCRIPTION

Lake Elsinore is a natural sink at the terminus of the San Jacinto River. The lake has historically fluctuated from being completely dry during drought years to periods of severe flooding during wet years. The economy of the Elsinore Valley has risen and fallen with this lake fluctuation. In 1980, the lake rose to an elevation of 1265.7 resulting in flood damages in excess of $30 million. Numerous attempts at developing a means of controlling the lake and enabling a healthy economy to be established have been attempted since the turn of the century but to no avail. The Corps of Engineers is in the process of completing a $750,000 study in an attempt to solve the flood problem but has been unable to justify a project under their guidelines. Following the 1980 flood, FEMA and numerous other federal agencies were involved in trying to develop a recovery program and ways of preventing future flood damages but nothing concrete was developed. Implementation of this project solve this long standing problem and will result in a controlled lake thereby allowing the economy to grow.

The purpose of the project is to maintain a minimum water elevation in the lake during dry years by reducing evaporation losses and introducing groundwater; the purpose of the project is also to maintain a maximum water elevation in the lake during wet years through the use of an evacuation channel. By managing the lake within optimal water surface elevations, benefits will be realized by agricultural irrigators, fish and wildlife, recreational users, and property owners who will benefit from the project. The impact of the project will have on lake elevation is indicated on Figure 1 which shows historical lake levels and what they would have been had the project been in place.

PHYSICAL WORKS

The principal project features are shown on Figure 2 and include:

1. Main levee, approximately 11,000 feet long by 33 feet high with a top elevation of 1,265, necessary to separate Lake Elsinore from the southeasterly flood plain. The levee will reduce the surface area of the lake to approximately 3,000 acres, thereby reducing evaporation losses, while also providing storage.

   The lands behind the levee will become available for use by agricultural irrigators and for recreational uses consistent with the land's continued designation as a flood plain (e.g. golf course).

2. Inlet channel modifications, twin parallel levees with top elevation 1265 which will convey 100 year storm runoff from the San Jacinto River to the contained Lake Elsinore.

3. Outlet channel modifications, deepening Lake Elsinore's natural outlet to a sill elevation of 1252, allowing outflow from the lake to occur during major storms.

4. Dredging, to elevation 1232 to provide a uniform, minimum water depth in Lake Elsinore.

5. Outlet pump station, located at the mouth of the lake's outlet channel. The pump station will lift a maximum 14 cfs from the lake where it will flow downstream for ultimate use by agricultural irrigators.

6. Levee drainage pump station, capable of pumping a maximum 90 cfs, to lift local storm runoff from behind the main levee into Lake Elsinore.

7. Water supply wells, rehabilitate 3 existing and drill 3 new wells to replenish Lake Elsinore in dry years and to supply water for agricultural irrigation.

8. Lakeshore Drive Park, a new recreational day use facility located on the northeast shore of Lake Elsinore, including picnic area, beach, and marina.

9. Riverside Drive Campground, expansion of an existing campground and marina, located on the northwest shore of Lake Elsinore.

10. Distribution pump station and piping, to divert and convey water from the Temescal Wash to agricultural irrigators.

PROJECT COST SUMMARY

Total Project Cost		$39,791,000
Loan (32-year repayment)		$ 3,262,000
Grant		$22,738,000
Local Contribution		$13,791,000
Rights-of-Way	($2,700,000)	
Loan Application	(135,000)	
CEQA-EIR	(25,000)	
Filing Fee	(1,000)	
Local Administration	(10,000)	
Cash	(10,920,000)	

WHAT WILL THE LAKE ELSINORE MANAGEMENT PROJECT DO:

1. Provide a safe clean lake which will attract more people and business to the area.

2. Provide for more jobs which would allow our economy to grow and allow a better standard of living for the people of the area.

3. Provide and maintain public recreational facilities allowing more and new income in taxes for district, county, state and federal governments.

4. Lake Elsinore serves as as recreational retreat for Los Angeles, Orange, San Diego and Riverside Counties with one if not the largest natural lakes in Southern California, the approval of funding for the Lake Management Project would also benefit agricultural irrigators, fish and wildlife as well as recreational users.

5. Put an end to the kind of flood disasters we have had in the past and are presently faced with in the future, the last disaster from flooding took more than ten lives and property damage exceeded more than $70 million dollars.

6. This project is far too important to be put off at this time and will cost much much more in hardship and money should the state and federal government fail to take action now in approving the plan.

Board of Supervisors

Riverside County Flood Control and Water Conservation District

RESOLUTION F85-16

RESOLUTION IN SUPPORT OF THE PROPOSED LAKE ELSINORE MANAGEMENT PROJECT

WHEREAS, the Elsinore Valley Municipal Water District (District), the County of Riverside (County), and the State of California, Department of Parks and Recreation (State), cooperated in the preparation of a study and report of the problems in stabilizing Lake Elsinore through flood control and water development improvements and enhancing the recreational opportunities of the lake under the provisions of the Small Reclamation Projects Act of 1956 (Public Law 84-984) as amended; and

WHEREAS, the findings of the study and report found that flood control improvements, water supply development, modification to the operational size of the lake, and recreational improvements are all feasible with benefit - cost ratios exceeding 1.0 to 1; and

WHEREAS, the District has, acting as the local sponsoring agency, submitted a report entitled, Proposed Lake Elsinore Management Project, to the Regional Director of the Bureau of Reclamation in Boulder City, Nevada, applying for a loan and grant of $26,000,000; and

WHEREAS, the Regional Director has forwarded the report to the Commissioner of Reclamation, recommending approval of the District's loan grant application in the amount of $26,000,000, under the provisions of the Small Reclamation Projects Act of 1956 (Public Law 84-984) as amended; and

WHEREAS, the President's budget for FY 86 does not contain an appropriation for the District's project loan; and

WHEREAS, it is vital to move this project into the design and construction stages as early as possible.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Riverside County, also acting as the governing Board of the Riverside County Flood Control and Water Conservation District, in regular session assembled on March 12, 1985, supports the loan and grant application request of the Elsinore Valley Municipal Water District for the Lake Elsinore Management Project and urges that the Secretary of the Interior approve the loan and grant application.

BE IT FURTHER RESOLVED that the Board does hereby endorse and support the appropriation of $500,000 for FY 86 to initiate the Lake Elsinore Management Project.

BE IT FURTHER RESOLVED that this resolution be transmitted to the Honorable Mark O. Hatfield, Chairman, Senate Committee on Appropriations, Subcommittee on Energy and Water Development; the

Honorable Tom Bevill, Chairman, House Committee on Appropriations, Subcommittee on Energy and Water Development; Riverside County's representatives in Congress: the Honorable Senator Alan Cranston; the Honorable Senator Pete Wilson; the Honorable A. A. McCandless, the Honorable George E. Brown, Jr.; and the Honorable Donald P. Hodel, Secretary of the Interior.

Roll Call resulted as follow:
Ayes: DUNLAP, CENICEROS, YOUNGLOVE, LARSON AND ABRAHAM
Noes: NONE
Absent: NONE

Board of Supervisors — Riverside County Flood Control and Water Conservation District

RESOLUTION IN SUPPORT OF AUTHORIZATION OF
THE SANTA ANA RIVER MAIN STEM PROJECT "ALL RIVER PLAN"

RESOLUTION NO. F 85-15

WHEREAS, the Boards of Supervisors of Orange, Riverside and San Bernardino Counties have for several years expressed unified support for the "All River Plan" alternative for the Santa Ana River Main Stem Project in accordance with the recommendations of the Chief of Engineers of the United States Army Corps of Engineers; and

WHEREAS, the Boards of Supervisors of all three counties have previously adopted resolutions endorsing specific language for congressional bills authorizing construction of the Santa Ana River Main Stem Project; and

WHEREAS, Congressman Robert A. Roe has now introduced H.R. 6 into the 99th Congress including authorization for the Santa Ana River "All River Plan" with language substantially in accordance with that requested by the Boards of Supervisors of Orange, Riverside and San Bernardino Counties; and

WHEREAS, the Assistant Secretary of the Army, by letter of January 4, 1985, has forwarded the report of the Chief of En-

gineers for the Santa Ana River Main Stem Project to the Speaker of the House of Representatives requesting the Congress to authorize the Santa Ana River Main Stem Project with language that deviates from the language of H.R. 6; and

WHEREAS, until the Congress adopts an authorization bill for the Santa Ana River Main Stem Project "All River Plan", the action of the Assistant Secretary of the Army would preclude continued engineering work in the analysis of alternative reservoir sites upstream from Prado Dam and Reservoir.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Riverside County, also acting as the governing board of the Riverside County Flood Control and Water Conservation District, in regular session assembled on March 12, 1985, hereby supports the language of H.R. 6.

BE IT FURTHER RESOLVED that this Board does hereby endorse and support the recommended budget of the President of the United States, and requests the Congress to appropriate in FY 1985/86 the amount of four million dollars ($4,000,000) and further requests Congress to direct the Corps of Engineers to continue detailed design activities in FY 1986 on all elements of the Santa Ana River flood control project, including the locally acceptable upstream project element, leading to completion of the Phase II General Design Memorandum.

BE IT FURTHER RESOLVED that this resolution be transmitted to the Honorable Mark O. Hatfield, Chairman, Senate Committee on Appropriations, Subcommittee on Energy and Water Development; the Honorable Robert T. Stafford, Chairman, Senate Committee on Environment and Public Works; the Honorable James Abdnor, Chairman, Senate Committee on Environment and Public Works, Subcommittee on Water Resources; the Honorable Robert A. Roe, Chairman, House Committee on Public Works and Transportation, Subcommittee

on Water Resources; the Honorable Tom Bevill, Chairman, House Committee on Appropriations, Subcommittee on Energy and Water Development; and to Riverside County's representatives in Congress: the Honorable Senator Alan Cranston; the Honorable Senator Pete Wilson; the Honorable A. A. McCandless; and the Honorable George E. Brown, Jr.

Roll Call resulted as follows:

Ayes: DUNLAP, CENICEROS, LARSON, YOUNGLOVE AND ABRAHAM
Noes: NONE
Absent: NONE

STATEMENT OF CALIFORNIA STATE SENATOR DIANE E. WATSON

I represent the 28th Senate District in Southern California, and strongly support the Lake Elsinore Management Project.

This plan is designed to make a reservoir out of Lake Elsinore, and as such, the ability to manage the water level and supply in the lake can be gained.

I believe this project will cost the taxpayers much less than the cost of future flood damage, not to mention the personal hardship. The lake's history is one of flooding and drying out, but if this project is funded by the Bureau of Reclamation, this cycle could be stopped.

An appropriation decision regarding the Lake Elsinore Management Project will soon be made by Congress. I would appreciate your consideration on this matter. Thank you.

STATEMENT OF CALIFORNIA STATE ASSEMBLYMAN DAVID G. KELLEY

As the representative of the 73rd Assembly District, which includes portions of Lake Elsinore, I am writing to express my very strong support for the Lake Elsinore Management Project.

This plan is designed to make a reservoir out of Lake Elsinore. As such, the ability to manage the water level and supply in the lake can be gained.

The Lake's history is one of flooding and drying out. But, if the Lake Elsinore Management Project is funded by the Bureau of Reclamation, this cycle will stop.

I would very much appreciate your Subcommittee giving the Lake Elsinore Management Project its' every consideration when the matter comes before you for an appropriation decision. Thank you for considering this request.

Statement of California State Assemblywoman Maxine Waters

My colleague in the California Assembly who represents a portion of the Lake Elsinore area, has informed me of his strong support for the Lake Elsinore Management Project because of its cost effectiveness and that it will eliminate future flood damage. In addition, one of the members of the board of the Elsinore Valley Municipal Water District has informed me of the acute need for this flood control project.

It is my understanding that Congress will soon make an appropriation decision regarding the Lake Elsinore Management Project. I am hopeful that once you have weighed all of the information regarding this project that you will vote favorably for the project. Thank you so much for your consideration.

Statement of California State Assemblywoman Gwen Moore

As State Assemblywoman for the 49th District, which includes residents of Los Angeles County, I urge your favorable consideration of the proposal to provide for management of Lake Elsinsore when it comes before your subcommittee on March 28.

The conversion of Lake Elsinore to a reservoir would result in ability to manage the water supply for agricultural, recreational and other purposes, and, given the history of flooding in the area, would save taxpayer dollars over the long run.

I believe residents of Southern California would benefit substantially from implementation of the management proposal, and again I urge your favorable consideration.

Statement of California State Assemblyman Steve Clute

I represent part of the area surrounding Lake Elsinore, and strongly support the Lake Elsinore Management Project. I believe this project will cost the taxpayers much less than the cost of future flood damage, not to mention the personal hardships.

An appropriation decision regarding the Lake Elsinore Management Project will soon be made by Congress. I would appreciate your consideration on this matter. Thank you.

STATEMENT OF SAN BERNARDINO COUNTY, CALIF.

The Board of Supervisors of the San Bernardino County Flood Control District, State of California, is appreciative of the opportunity to present a program of Flood Control projects for Fiscal Year 1985-86. This program summarized below is urgent to provide normal protection to life and property in San Bernardino County, and considered by this Board as essential both to local and national interests, as demonstrated by recent floods.

1.	Santa Ana River Main Stem "All River Plan" including Alternatives above Prado Dam	$4,000,000
2.	Santa Ana River and Orange County INTERIM II	
	San Timoteo Creek & Other Tributaries	$150,000
	Del Rosa Channel	$150,000
3.	Mojave River Dam Gates	$500,000
4.	Lytle and Warm Creeks	$2,354,000

We earnestly solicit your approval of these programs and their funding to provide for the most urgent flood control requirements of San Bernardino County.

SANTA ANA RIVER AND ORANGE COUNTY

INTERIM REPORT II

Flood control improvements of the utmost importance to San Bernardino County are included in the survey for flood control entitled "Santa Ana River Basin and Orange County Review Report".

The second of five interims of this report included major upstream tributaries of the Santa Ana River. These projects are Zanja Creek, San Timoteo Creek, Wilson-Wildwood Creeks, Rialto Channel, Del Rosa Channel and San Jacinto River. Major flooding on these Santa Ana River tributaries in past and recent years have closed hampered emergency services, disrupted vital utilities, damaged property and endangered life.

The requested funding recommended by the State of California Water Commission is for $150,000 to begin general investigation for Del Rosa Channel and $150,000 to continue general investigation and technical studies for San Timoteo Creek through the City of Loma Linda and other tributaries in San Bernardino County.

SANTA ANA RIVER MAIN STEM
Riverside, Orange, San Bernardino Counties
(Alternate Storage Sites Under Study

Corps of Engineers studies indicate that this project has one of the highest priorities in the United States. Future floods on the Santa Ana River could cause an estimated $9.2 billion in damage and would jeopardize the lives of over 1.8 million people. By Resolution, the three counties of Riverside, Orange and San Bernardino have expressed united and strong support for this All-River Plan project.

The $4.0 million in the President's Budget and recommended by the State of California Water Commission is to continue detailed design activities in Fiscal Year 1985-86 on all elements of the Santa Ana River flood control project including the locally acceptable upstream project element, leading to completion of the Phase II General Design Memorandum.

LYTLE AND WARM CREEK PROJECT

The multi-million dollar Lytle and Warm Creeks Project designed for standard project floods was completed in 1979. The 1980 storm generated over a million cubic yards of unexpected sediment deposit along the main stem Santa Ana River near Warm Creek and Lytle Creek confluence. Due to the massive debris build up, the channel now provides significantly less than 100-year protection and endangers the main line of both the Atchison, Topeka and Santa Fe and the Southern Pacific Railroads, Interstate Highways 10 and 215 in addition to major utility lines servicing our County and the greater Los Angeles metropolitan area. The Corps of Engineers has design modification concepts for correcting the sedimentation problem which will again provide acceptable levels of flood protection. Total cost of this proposal is $2.6 million. The $2,354,000 in the President's Budget and recommended by the State of California Water Commission is required in Fiscal Year 1985-86 to complete the construction of the project. Correction of this deficiency is vital to provide the intended protection to life and property.

MOJAVE RIVER DAM GATES

The Mojave River Dam and appurtenances were completed in May 1971. This $18,341,000 project has a large outlet works located in the left abutment of the dam and is ungated. Storm waters released from the outlet are causing substantial damages and high maintenance costs to the existing downstream levee system protecting the 19,000 acres of agricultural lands along the Mojave River. These storm waters are also devastating to the cities of Victorville and Barstow. Both local and arterial highways are closed annually. Additionally, water conservation needs can be accomplished by gating this outlet. The State of California and Mojave Water Agency support the project as groundwater basins underlying the Mojave River are being depleted approximately 50,000 acre feet annually.

On June 23, 1980, the San Bernardino County Flood Control District Board of Supervisors and other local agencies adopted a resolution requesting Congressional approval for a study by the U. S. Army Corps of Engineers, Los Angeles District, to modify the ungated outlet of the Mojave River Dam. The current funding requirement of $500,000 and recommended by the State of California Water Commission is needed to initiate the General Design Memorandum (GDM), so that construction can quickly be initiated to maximize benefits of this existing facility.

LYTLE AND WARM CREEKS PROJECT

SUPPLEMENTAL MEMORANDUM NO. 1

ORIGINAL PROJECT AUTHORIZED	Public Law 89-298, 89th Congress, 1st Session, Approved October 27, 1965.
TOTAL FEDERAL COST ESTIMATED	$37,600,000
PRIOR CONSTRUCTION FUNDS	$35,246,000
STATE OF CALIFORNIA WATER COMMISSION RECOMMENDATIONS Fiscal Year 1985-86:	$ 2,354,000
PRESIDENT'S BUDGET Fiscal Year 1985-86:	$ 2,354,000
REQUIRED ACTION:	Approval by Appropriations Committees and Congress of $2,354,000 to construct the project to correct the sedimentation problems.

MOJAVE RIVER DAM GATES

SECTION 216 STUDY

REVIEW OF COMPLETED PROJECT

ORIGINAL PROJECT AUTHORIZED	Public Law 86-645, 86th Congress, House of Representatives 7634, July 14, 1960.
TOTAL CONSTRUCTION COST*	$18,341,000
PRIOR PLANNING AND ENGINEERING	$ 1,180,000
STATE OF CALIFORNIA WATER COMMISSION RECOMMENDATIONS Fiscal Year 1985-86:	$ 500,000
PRESIDENT'S BUDGET Fiscal Year 1985-86:	-0-
REQUIRED ACTION:	Approval of $500,000 by Appropriations Committees and Congress to initiate the General Design Memorandum.

*Includes $250,000 of non-Federal construction costs

SANTA ANA RIVER BASIN AND ORANGE COUNTY REVIEW REPORT

SAN BERNARDINO, RIVERSIDE AND ORANGE COUNTIES, CALIFORNIA

INTERIM REPORT II

SURVEY AUTHORIZED	Review Report Authorized by Resolution of the House of Representatives Committee on Public Works, adopted May 8, 1964.
TOTAL FUNDS REQUIRED:	$9,430,000(1)
PRIOR SURVEY FUNDS APPROVED	$7,194,000(2)
STATE OF CALIFORNIA WATER COMMISSION RECOMMENDATIONS Fiscal Year 1985-86:	
San Timoteo Creek and Other Tributaries	$ 150,000
Del Rosa Channel	$ 150,000
PRESIDENT'S BUDGET Fiscal Year 1985-86:	-0-
REQUIRED ACTION:	Approval of the Appropriations Committees and Congress in Fiscal Year 1985-86 of $150,000 to continue general investigation and technical studies of San Timoteo and other tributaries in San Bernardino County and $150,000 to begin general investigation for the Del Rosa Channel Study.

(1) San Bernardino County Survey portions include upstream elements, San Timoteo Creek and tributaries (San Timoteo Creek-Loma Linda, Redlands Zanja, Wilson and Wildwood Creeks), Warm Creek and tributaries, San Sevaine Creek and tributaries, and Rialto Channel.

(2) Includes $425,000 previously allotted to Bureau of Reclamation (Department of Water and Power Resources).

SANTA ANA RIVER MAIN STEM FLOOD CONTROL PROJECT

ALL RIVER PLAN

PROJECT AUTHORIZED	Public Law 94-587, Section 109, 94th Congress, 2nd Session, Approved on October 22, 1976.
TOTAL PLANNING AND ENGINEERING FUNDS REQUIRED	$17,000,000
PRIOR PLANNING AND ENGINEERING FUNDS	$ 9,025,000
STATE OF CALIFORNIA WATER COMMISSION RECOMMENDATIONS Fiscal Year 1985-86:	$ 4,000,000

PRESIDENT'S BUDGET
Fiscal Year 1985-86: $ 4,000,000

REQUIRED ACTION: Approval of $4,000,000 by Appropriations Committees and Congress to continue detailed design activities on all elements of the Santa Ana River flood control project including the locally acceptable upstream project elements.

MINUTES OF THE BOARD OF SUPERVISORS
OF SAN BERNARDINO COUNTY, CALIFORNIA

On motion of Supervisor Riordan, duly seconded by Supervisor Hammock, and carried, the following resolution is adopted by the Board of Supervisors of the County of San Bernardino, State of California:

RESOLUTION NO. 85-116

WHEREAS, on March 1, 1985 the State Water Commission will adopt final recommendations for Fiscal Year 1985-86 funding for water and flood control projects; and

WHEREAS, these recommendations will be submitted to the Congressional Appropriations Committee; and

WHEREAS, there are several projects needed to solve serious flood control problems in San Bernardino County;

NOW, THEREFORE, BE IT RESOLVED that the San Bernardino County Board of Supervisors strongly supports and recommends the following projects:

PROJECT	PRESIDENT'S BUDGET	S.B. COUNTY RECOMMENDATION FEB. 25, 1985
U.S. ARMY CORPS OF ENGINEERS		
1. SANTA ANA RIVER MAIN STEM - "ALL RIVER PLAN" INCLUDING ALTERNATIVES ABOVE PRADO DAM General Investigation	$4,000,000	$4,000,000
2. SANTA ANA RIVER AND ORANGE COUNTY INTERIM REPORT II General Investigation		
SAN TIMOTEO CREEK & OTHER TRIBUTARIES	- 0 -	150,000
DEL ROSA CHANNEL	- 0 -	150,000
3. MOJAVE RIVER DAM GATES Begin Detail Design	- 0 -	500,000
4. LYTLE AND WARM CREEKS Construction Funding	2,354,000	2,354,000
BUREAU OF RECLAMATION		
1. DAY CREEK WATER CONSERVATION Construction Loan Funds	- 0 -	5,000,000

PASSED AND ADOPTED by the Board of Supervisors of the County of San Bernardino, State of California,

MINUTES OF THE BOARD OF SUPERVISORS
OF SAN BERNARDINO COUNTY, CALIFORNIA

On motion of Supervisor Riordan, duly seconded by Supervisor Hammock, and carried, the following resolution is adopted by the Board of Supervisors of the County of San Bernardino, State of California:

RESOLUTION NO. 85-117

WHEREAS, The Boards of Supervisors of Orange, Riverside and San Bernardino Counties have for several years expressed unified support for the "All River" alternative for the Santa Ana River Main Stem Project in accordance with the recommendations of the Chief of Engineers of the United States Army Corps of Engineers; and

WHEREAS, the Boards of Supervisors of all three counties have previously adopted resolutions endorsing specific language for congressional bills authorizing construction of the Santa Ana River Main Stem Project; and

WHEREAS, Congressman Robert Roe has now introduced H.R. 6 into the 99th Congress including authorization for the Santa Ana River "All River Plan" with language substantially in accordance with that requested by the Boards of Supervisors of Orange, Riverside and San Bernardino Counties; and

WHEREAS, the Assistant Secretary of the Army, by letter of January 4, 1985, has forwarded the report of the Chief of Engineers for the Santa Ana River Main Stem Project to the Speaker of the House of Representatives requesting the Congress to authorize the Santa Ana River Main Stem Project with language that deviates from the language of H.R. 3678; and

WHEREAS, until the Congress adopts an authorization bill for the Santa Ana River Main Stem Project "All River Plan", the action of the Assistant Secretary of the Army would preclude continued engineering work in the analysis of alternative reservoir sites upstream from Prado Dam and Reservoir.

NOW, THEREFORE, BE IT RESOLVED that this Board of Supervisors of the County of San Bernardino, also acting as the governing board of the San Bernardino County Flood Control District, in regular session hereby supports the language of H.R 6.

BE IT FURTHER RESOLVED that this Board does hereby endorse and support the recommended budget of the President of the United States, and requests the Congress to appropriate in FY 1985/86 the amount of four million dollars ($4,000,000) and further requests Congress to direct the Corps of Engineers to continue detailed design activities in Fiscal Year 1986 on all elements of the Santa Ana River flood control project, including the locally acceptable upstream project element, leading to completion of the Phase II General Design Memorandum.

BE IT FURTHER RESOLVED that this resolution be transmitted to the Honorable Robert A. Roe, Chairman of the House Subcommittee on Water Resources, the Honorable James Abdnor, Chairman of the Senate Subcommittee on Water Resources, to San Bernardino County's representatives in Congress, the Honorable Jerry Lewis, the Honorable George E. Brown, Jr., the Honorable Senator Alan Cranston, and the Honorable Senator Pete Wilson.

PASSED AND ADOPTED by the Board of Supervisors of the County of San Bernardino, State of California,

STATEMENT OF UNITED WATER CONSERVATION DISTRICT

Request: Provision for $6.681 Million of Appropriation in the Bureau of Reclamation's 1985-86 Federal Budget.

Purpose: To provide funding, under a PL 84-984 Small Projects Act Loan, for project construction in FY 1985-86.

My name is Thomas F. Dullam Jr. I am President of the United Water Conservation District Board of Directors.

I am here to request that you give every possible consideration to the inclusion of $6.681 Million in the FY 1985-86 Federal Budget to provide urgently needed funding for construction of the Freeman Diversion Improvement Project.

Under a Joint Powers Agreement, the County of Ventura and the United District are committed to resolving this problem, and are cooperatively engaged in the Seawater Intrusion Abatement Program. Phase I of that program is nearing completion at a cost of $15 Million, funded almost equally from State and local monies. Environmental issues have resulted in costly delays on implementing Phase II, the Freeman Diversion Improvement Project. The problem is one of extreme urgency and it is imperative that Phase II proceed without further delay.

An abstract outline/summary of the very serious problem of Seawater Intrusion and the project proposal for resolving the problem are appended. Your further review of the problem and the urgency of our funding needs is respectfully requested.

Thank you for the opportunity of appearing before you today to request your consideration for assistance in this critical matter.

PROJECT ABSTRACT OUTLINE/SUMMARY

PROJECT TITLE. FREEMAN DIVERSION IMPROVEMENT PROJECT

APPLICANT. United Water Conservation District of Ventura County, California.

PROBLEM AND LOCATION. Seawater Intrusion on the Oxnard Coastal Plain, Ventura County, California, acknowledged to be by far the most severe problem of its kind in the state.

PROJECT PURPOSE. To increase diversions of Santa Clara River waters for use in controlling the advance of seawater intrusion into the underground aquifers of the Oxnard Plain.

PROJECT AREA AND POPULATION.

Urban Area	30,050 Acres
Irrigated Agriculture	39,150 Acres
Total Area	69,200 Acres
Total Population	162,000

ESTIMATED COST AND FINANCING PLAN.

Total Project Costs:	$19,556,000
Financing:	Federal loan, under the Small Reclamation Projects Act, PL 84-984, as amended.
Total Appropriation Requirement:	$18,227,300

APPROPRIATION REQUEST FOR FY 1985-86. The amount of $6.681 Million is requested for appropriation in FY 1985-86, as the first year of a two-year construction program.

URGENCY FOR RESOLVING PROBLEM. Seawater has already intruded into the freshwater aquifers underlying 25% of the Oxnard Coastal Plain, as depicted on Figure I appended as the last page of this statement. Its further advance must be halted without delay, which is vital to preserving and maintaining the economy of the entire area.

STATEMENT OF WESTLANDS WATER DISTRICT, CALIFORNIA

My name is Jerald R. Butchert. I am Manager of the Westlands Water District, Fresno, California.

Westlands is a public entity organized pursuant Water Code of the State of California. Our District secures irrigation water from the San Luis Unit of the Federal Central Valley Project which it acquires by purchase from from the United States Bureau of Reclamation. It. in turn, sells the water to farmers within our District at a price which reflects its price plus operating expenses.

I respectfully urge your approval of the sum of $12,600,000 requested by the Administration for the San Luis Unit for the Fiscal Year 1986. Funding at that level would be utilized as follows:

Joint State-Federal San Luis Canal	$ 200,000
Westlands Distribution System	1,500,000
Drainage Collector System	200,000
San Luis Drain Studies	10,700,000

As you are well aware, nearly two weeks ago on March 15, 1985, the Secretary of the Interior embargoed further use of the Kesterson Wildlife Refuge as a repository of irrigation drainage water from Westlands. That action makes continuation of the San Luis drainage studies more urgent than ever. For that reason I commend approval of the full budget request, including $10,700,000 for the drainage studies during the 1986 fiscal year.

STATEMENT OF STOCKTON, CALIF.

I am Mayor Randall "Randy" Ronk of the City of Stockton, California authorized by the Stockton City Council to make this statement before your honorable body today.

The City of Stockton supports the Corps of Engineers and Bureau of Reclamation surveys, flood control and reclamation projects in the following amounts:

1.	New Melones Project	$ 1,200,000
2.	Deepening of the Stockton Ship Channel to 35 feet and realigning part of the Channel	$21,000,000
3.	Aquatic Plant Control--San Joaquin River Delta	$ 140,000
4.	San Joaquin River Basin Survey	$ 110,000
5.	Auburn-Folsom South	$ 3,500,000
6.	Delta Support Studies	$ 1,100,000

FLOOD CONTROL -- CORPS OF ENGINEERS

NEW MELONES PROJECT----------$ 1,200,000

The President's budget provides $1,200,000 to advance construction of minimal recreation facilities in the reservoir area. We believe the full, authorized recreation facilities in the reservoir area and the access, recreational and spawning-bed improvements in the lower river area, should be completed promptly so the Project can serve all its authorized purposes and can maximize its benefits. The California Water Commission's recommendation of $1,200,000 is supported.

SAN FRANCISCO BAY TO STOCKTON SHIP CHANNEL DEEPENING--$21,000,000

The President's budget contains $21,000,000 for the San Francisco

Bay to Stockton Ship Channel Deepening. The City supports the full appropriation in order for the project to be completed as soon as possible.

AQUATIC PLANT CONTROL--SAN JOAQUIN RIVER DELTA-------$ 140,000

Substantial success has been achieved in controlling the massive water hyacinth blockage of Delta channels in and near the San Joaquin River arm of the Delta. These plants, which threatened to block all channel navigation, should be eradicated.

SURVEY -- CORPS OF ENGINEERS

SAN JOAQUIN RIVER BASIN SURVEY----------$ 110,000

The City of Stockton supports the recommendation of the California Water Commission that $110,000 be appropriated for the San Joaquin River Comprehensive Basin Survey as recommended in the budget. The City is particularly interested in the portions of the survey which deal with the river channel upstream of the Delta.

BUREAU OF RECLAMATION

AUBURN-FOLSOM SOUTH----------$ 3,500,000

The President's budget contains $3,500,000 for work in the Auburn Dam area in fiscal year 1985-86. The Bureau of Reclamation and the California Department of Water Resources are reviewing the costs of the project from a value-engineering viewpoint. Preliminary reports by the Bureau indicate the Project is economically justified when its physical facilities are modified in accordance with revised designs.. The water supplies which can

be made available by Auburn are essential to resolving the minimum flow problems on the Lower American River and to providing water for the Folsom South Canal service area.

An important part of the Auburn construction is the Folsom South Canal which now ends about 10 miles north of the San Joaquin County line. Currently, all the public water agencies, including the City, which will be served with water from the Canal, are having a comprehensive groundwater management study done of the area. This $400,000 study, which is locally funded, will enable several water districts in the area to plan conjunctive use of groundwater and surface water to this agricultural area which is primarily pasture, vineyard, row and orchard crops.

The Bureau should be making studies parallel to those on Auburn Dam looking toward eventual extension of the Canal into the County to deliver supplemental water. Upon completion of the Environmental Impact Statement, service area studies will be required in support of contracts for the supplemental water. Therefore, the City supports the Water Commission's recommendation of $3,500,000 for this project.

DELTA SUPPORT STUDIES----------$ 1,100,000

A wide variety of analyses and studies are required in the Sacramento-San Joaquin Delta in connection with existing and potential problems. Many of these programs involve cooperation with the State of California since both the State Water Project and Federal Central Valley Project use the Delta as a means of conveying water across the Delta to their export pumping plants. The State expends large sums in studying the effects of cross-Delta flows on water quality in the Delta and on export waters in studying the effects of Project operations on fishery resources. The Bureau should have comparable funds with which to discharge its responsibilities toward the Delta. The City supports the President's budget for these studies.

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Resolution No. 85-0156

STOCKTON CITY COUNCIL

WHEREAS, on March 28, 1985, appropriate committees of the Congress of the United States will conduct hearings to consider Federal Appropriations for flood control, reclamation, and navigational projects and surveys for fiscal year 1985-86; and

WHEREAS, several projects and surveys to be considered at said Congressional hearings will be of benefit to the City of Stockton and its environs; and

WHEREAS, the expeditious construction of said projects and completion of said surveys is required to protect the health, welfare and safety of the residents of this area; now therefore

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF STOCKTON, AS FOLLOWS:

That the City of Stockton does hereby support the appropriation by the Congress of the United States of funds for fiscal year 1985-86 for the planning, continuation and completion of flood control, reclamation, and navigational projects and surveys; namely NEW MELONES PROJECT, SAN FRANCISCO BAY TO STOCKTON SHIP CHANNEL DEEPENING, AQUATIC PLANT CONTROL--SAN JOAQUIN RIVER DELTA, SAN JOAQUIN RIVER BASIN SURVEY, AUBURN-FOLSOM SOUTH AND THE DELTA SUPPORT STUDIES which affect the City of Stockton and its environs; be it

FURTHER RESOLVED, that the representatives of the City of Stockton, Mayor Randall "Randy" Ronk and Vice-Mayor Jim Parkinson are authorized to appear before appropriate committees of the Congress of the United States on March 28, 1985 for the purpose of making presentations consistent with this resolution; be it

FURTHER RESOLVED, that the City Manager is hereby authorized and directed to send copies of this resolution to the Honorable Alan Cranston, the Honorable Peter Wilson, the Honorable Norman Shumway and the Honorable Richard Lehman.

PASSED, APPROVED and ADOPTED this 18th day of March, 1985.

/S/ RANDY RONK

RANDALL "RANDY" RONK, Mayor
City of Stockton

ATTEST:

/S/ FRANCES HONG

FRANCES HONG, City Clerk
City of Stockton

STATEMENT OF WHEATLAND WATER DISTRICT

The Yuba County Water Agency's completed application for a PL84-984 Loan to build the long needed South County Irrigation Project was forwarded to the Commissioner of the Bureau of Reclamation in February 1981. A reduction in the number of member units from seven to five necessitated an amended application dated February 1984. This amended application is now completed. The Wheatland Water District, as the largest contracting entity, urges your committee to approve the application for the Yuba County Water Agency.

The Presidents proposed budget for fiscal year 1985/86 includes $8,400,000. This amount is recommended in the application report and will permit the completion of the project in accordance with the proposed schedule.

The project appears to be consistent with several national goals:

1. All of the Federal funds will be repaid directly from the project revenues.

2. The jobs provided during the construction period will provide significant benefits to Northern California's depressed economy.

3. Agriculture in the area served by the project is threatened with drastic reduction because ground water supplies continue to decline at an ever increasing rate. The completed project will assure continued long term economic stability of the area by providing a new and reliable source of water.

The project is described in more detail in the following paragraphs.

Proposals to provide Yuba River water to southern Yuba County were developed as early as 1954. A diversion dam and canal system were included as part of the Agency's New Bullards Bar Project, which began operation in 1969. However, lack of available funds caused deletion of the South County Irrigation facilities from the first stage hydroelectric and irrigation project. The Agency still holds the permits for the South County project water

which will be supplied from storage in New Bullards Bar Reservoir.

The 44,000 acre feet of irrigation water that will be provided annually by this project is only sufficient to balance the present overdraft which now occurs. The reduced use of pumps will save many billion kilowatt hours of energy per year.

Ground water levels have dropped nearly eighty feet during the past sixty years. Current overdrafts result in lowering ground water levels an average of more than four feet per year. If the rapidly declining supply of ground water is not replaced with surface water, production of agricultural products must be curtailed.

An additional 12,200 acre feet will also become available for domestic use at Beale Air Force Base and to three nearby developed communities having a combined total permanent population of 36,000.

The Linda County Water District, Olivehurst Public Utility District and the City of Wheatland are now experiencing ground water quality and quantity problems.

The PL984 project will include mitigation measures to compensate for the loss of fish and wildlife habitat.

A summary of the most important features of the project are listed below:

1. Diversion structures at the Yuba River, consisting of an inlet structure, pipeline and fish screen/return system.
2. Concrete lined 350 cfs, 5.7 mile main canal from the diversion structure to the north boundary of Beale Air Force Base.
3. Concrete lined 300 cfs, 9.2 mile Beale canal across Beale Air Force Base. This canal would serve the Wheatland Water District.
4. Approximately 56 miles of distribution system canals to serve a net area of about 16,500 acres.
5. A 500 Kilowatt hydroelectric generation unit located at the pipe drop turnout to the Wheatland Water District distribution system.

The California Water Commission unanimously supported the project which is scheduled to be funded as follows:

Fiscal year 1986	$ 8,400,000
Fiscal year 1987	$10,100,000

The Yuba County Water Agency has acknowledged its obligation to raise its matching share of the funds, $4,600,000 and we respectfully request formal action by your Sub-Committee to authorize the Federal appropriations.

OPPOSITION—SAN LUIS REY PROJECT, CALIFORNIA

STATEMENT OF ALEX DEUTSCH, BOARD CHAIRMAN, DEUTSCH MUNICIPAL AIRPORT, OCEANSIDE, CALIF.

Subject:

$1,400,000 request in the budget for Congressionally Approved San Luis Rey River project sponsored by the City of Oceanside and designed by the Corps of Engineers.

Purpose 1) To advise this Committee not to approve this request since the money spent would be totally wasted.

2) To plead with this Committee to send the San Luis Rey River project back to the Public Works Committee of the House for re-examination and evaluation.

SUMMARY OF REQUEST

Page 2 - Short presentation showing why the $1,400,000 request is unnecessary.

Page 3 - Corps of Engineers cost breakdown showing where the money can be saved using the Corps figures.

Page 4 - Complications, miscalculations, mistakes by the Corps of Engineers and the environmentalists.

Page 5 - Summary of reasons for requesting Appropriation Committee to recommend return to Public Works Committee.

Please Note:

CAP = Congressionally Authorized Plan designed by the Corps of Engineers as a double levee channel requiring 420 acres - and approved by Congress in 1970, estimated cost $9,720,000.

SLP = Single Levee Plan designed by the Corps of Engineers, after 1978 similar to the Congressionally Authorized Plan except 3½ miles of levee is removed on the north side, and now requires 935 or 515 more acres than the original Corps plan, estimated cost $45,000,000.

This request for $1,400,000 is $500,000 higher than last years $900,000 request. The money is supposed to cover the cost of improving the revetments presently exisiting between Interstate 5 and the ocean - the present construction is beyond 100 year flood control requirement.

I would like to quote from the Corps authorizing document of April 3, 1970 presented to Congress by Colonel Norman E. Pehrson, CE, District Engineer, and accepted by John A. B. Dillard, Brigadier General, U.S. Army Division Engineer:

Page 33,"65. San Luis Rey River channel improvement (recommended plan). -- The recommended channel improvement, which would be approximately 7.2 miles long, would include (a)

an earth-bottom trapezoidal channel about 5.7 miles long from Murray Road to about 1 mile upstream from U.S. Highway No. 101; (b) about 1.5 miles of channel grading, which in general would be limited to the removal of spoil banks, from 1 mile upstream of U.S. Highway No. 101, through the "narrows" section, to the ocean; and (c) about 800 feet of stone-revetted levee on the left (south) bank from the railroad to the ocean."

Please note the 800 foot levee for the south side requested by Colonel Pehrson was built by the property owners in 1978 and is in place. Colonel Pehrson also recommends to leave the north side levee alone because it is satisfactory.

Page 34,"68. Downstream from the Santa Fe railroad, a stone-revetted levee to contain the standard project flood would be constructed on the south bank to protect about 7.5 acres of potentially high-value land. The existing stone levee on the right bank protecting the small-craft harbor, which would control a flow of 60,000 cubic feet per second, would not be modified although it would be overtopped by a standard project flood. Raising the right levee would require complete reconstruction which is not warranted by the relatively low average annual damages in the harbor area that could result from floods with peaks larger that 60,000 cubic feet per second. Studies also showed that the construction of the left-bank levee would not adversely affect the existing right-bank levee to an appreciable degree. The existing lagoon within this reach would not be disturbed."

The two above quotations taken from the Corps publication to Congress clearly shows no need for any more work in this area.

The channel between Interstate 5 and the ocean is over 550 feet wide at the narrowest point, much wider than required for a 100 year flood - add all this together other than clearing the river, there is not any need for wasting taxpayers money - the job has been finished.

We have been claiming for a long time that the cost of construction of the San Luis Rey River channel protection should not total more than $5,000,000. The Corps now tells us that the estimate of the total cost, including land will be approximately $45,000,000. I would like to explain how this reduction can come about by giving you some samples of savings. Let me explain first some of the circumstances:

1. The Corps is estimating a project flood control (250 - 500 years), in the State of California, San Diego County, 100-year flood control is sufficient. The Corps made an estimate and said they could save $2,000,000 in construction costs using 100-year flood control but they could not meet the Benefit Cost Ratio. In our opinion they cannot meet the BCR in either case. It seems ridiculous that the Corps has to go to a higher price in order to pass the BCR.

2. The excellent Congressionally Authorized Plan by the Corps required 420 acres. The ridiculous Single Levee Plan currently pushed by the Corps requires over 920 acres with 3½ miles less shore protection. The extra 500 acres

outside of the CAP river area, using the price the City just paid for ten acres, at $80,000 per acre, would require an expenditure of over $40,000,000 for the extra land.

3. Most of the property owners have agreed to "no charge" for their river land under our plan.

4. The City of Oceanside requires the building adjacent to the River area to be at the 100-year flood height, or higher. To accomplish this a large amount of dirt is required and the property owners would be glad to clean out the River, remove any dirt that is surplus to the River and put it on their own property, which they need badly. The Corps in their Single Levee Plan are proposing to dig out this dirt and haul it to the ocean. This saving is several million dollars. There are many more savings, but let me list the positive approach.

1. Over 16,000 ft. of rip rap levee are already constructed. Not all of it is 100-year flood height but all the property owners have agreed to bring their levees to the 100-year flood height. There is another 5,500 feet on the South shore that the Corps, after a 17 month delay, just this month granted a permit. This approximate 4 miles of levee deducted from the Congressionally Authorized Plan 11.4 miles leaves something less that 8 miles of levee to be built. We have a firm quotation of 100-year levee of $70 per running foot. Using the figure of $400,000 per mile, or $3,200,000 for the levee work leaving a balance of $1,800,000 for other works that we want to do. Suffice to say, we can do the job for under $5,000,000. We need permission from the Corps and cooperation with the City. Naturally, the property owners that build their own levees want the right to use their land.

The quest for flood protection in the San Luis Rey River area has been going on since 1938. In 1970, Congress passed a bill which became identified as the Congressionally Authorized Plan. This plan covering 420 acres and 7.2 miles of river channel with 5.7 miles of rip rap levees on both sides of the river from Murray Road to 1½ miles from the ocean - the estimated cost including land acquisition to be $9,720,000. The present estimate of the new Corps Single Levee Design is $45,000,000 - with over 3½ miles less protection on the North side of the river.

In 1968 the Corps, under the influence of the environmentalist agencies, started a new radical design by eliminating 3½ miles of levee on the North side of the lower end of what was the Congressionally Authorized Plan. The purpose was to please the environmentalists who were hoping to keep this particular unprotected area "open space" with no development. The original Corps design of the Congressionally Authorized Plan was to cover approximately 420 acres at a cost including land, estimated at $9,720,000. The present estimate of the new Corps Single Levee Design is over 920 acres with 3½ miles less protection on the North side of the river. The Corps estimated cost for this project is now $45,000,000.

The Corps soon recognized that to protect the south leveee they had to keep the river away from the South shore so they designed a series of groins perpendicular to the shore

190 feet long then added another 90 feet of vegetation, total 250 feet, moved the river to the north for another 400 feet and allowed another 150 feet of land (average) for the north bank area. This additional 400 feet by 3½ miles or approximately 170 acres - value at least $13,600,000. The City just made a deal with Home Capital for land near the River at $80,000 per acre.

After the 1980 flood, in order to protect our plant, we decided we could not wait for the Corps and constructed our own protection. We built what is about a 50-year flood protection levee on the south side of the river. Since the river was now confined by the south levee, during a flood the north bank began to wash away, and to protect our property we then built a revetment on the north side - our channel is 400 feet wide at the narrowest point, we kept the channel clean and are comfortable with our protection on both sides of the channel. When we resolve the differences between the City, Corps of Engineers and the property owners, we will build our revetments to the county 100-year maximum flood requirement.

Since we started building levees in 1980, other property owners have elected to do the same in the 5.7 miles that the Corps planned in 1970 - but, instead of a project flood control the property owners are planning to eventually complete a 100-year flood control, which is the maximum required by San Diego County. Following is a list of already built levees or revetments.

North Side		South Side	
Deutsch	3000 ft. 50- year	Deutsch	4000 ft. 50-year
Lee	2500 ft. 100-year	Siegal	2800 ft. 50-year
Oak Ind.	2000 ft. 100-year	Fredericks	2000 ft. 100-year

In the winter of 1982, most of Southern California had water damage. The San Luis Rey had one of its largest flows in years but because the pilot channel was relatively clean and many property owners had built their own levees, there was not any damage. This month the Corp finally granted a permit to build 5,500 feet of protection between Siegal and Fredericks, when this will be built the danger of any flood up to 50 years doing any serious damage to Oceanside will have been eliminated from Douglas Drive to the ocean.

In August, 1984, at our request, Mr. Sanford Wall, Deutsch Co. general counsel, and Mr. David Phifer, a cost consultant, met with Mr. William Cheadle, Chief of the Corps real estate division, and other members of the Corps to discuss, compare and substantiate the Corps values for land acquisition. Mr. Wall and Mr. Phifer were informed that the values were obtained from an independent appraisal report and that such report was exempt from the Freedom of Information Act and not for public viewing. A Freedom of Information Act request was made and denied. We are still unaware of the nature and method of the Corps valuation. We believe the Corps valuation placed on the extra 500 acres is far below real values. We question the integrity of the Corps approval.

There are many reasons why this project should go back to the Public Works Committees of the House and Senate.

1. The engineering is very bad.
2. The reasons for the design are now eliminated.
3. By using a Single Levee Design, the North river bank is not confined so that the river, during high flow can meander. As the river meanders, it will turn back against the single levee and undermine the rock and erode through the Levee so the Corps has proposed groins to keep the river from impinging on the river in a destructive manner. If there were a levee of 400 feet away from the South shore, like there is upstream, there would not be any need for extra land acquisitions, groin expense, etc. - saving of millions.
4. The City of Oceanside will not work with the property owners as long as there is an approved project, hoping for the $45,000,000 channel.
5. During the original examination back in the 1960's, research showed that the best plan would be a reservoir, the cost at that time did not seem to warrant a reservoir. The situation today is different - this should be re-examined.

Please send this project back to the respective House and Senate Commitees.

STATEMENT OF J.F. CASSAN, OCEANSIDE, CALIF.

I have been a resident of the City of Oceanside since 1929. I moved my business to its present location in 1962.

I have built and maintained the road which includes a bridge 420 ft long to cross the river at no expense to anyone but myself. This provides access to my property as well as to the Prince of Peace Abbey, and neighboring property.

The river bed in this area is approximately a thousand feet wide outside of my property which is all above the 100 year flood plain. The original flood control plan approved by the Corps of Engineers and Congress would have taken 420 acres to build, which would have required excavating a small portion of my property. The Single Levee Plan calls for excavating almost all of my property and would force the Corps to move the river about 250 ft to the north. This ruins my life's work of building my business. I have never heard of a river being moved to please some greedy environmentalists.

I was on the Citizens Committee to study flood control for the valley. After many meetings and much testimony we voted for the authorized plan. One month later the Corps of Engineers called another meeting and informed us that this was unacceptable to some people. We would have to consider some other way to use up more land. They showed us a plan with a levee on only one side with groins built where the river now runs. Some quick math showed that there were some 3000 feet of these groins which would contain enough rock to build approximately 6000 feet of the levee or more practically revetment so that the land would be above flood danger.

When the smoke all cleared, the committee had a tied vote. A previous member who was now a city council person and since has been defeated for re-election called the city attorney and received the opinion that she could still vote and broke the tie for the single levee.

The land the city will have to buy, some 800+ acres, shows on the plan to cost 6 million dollars. I have an offer for my 34 acres at $100,000 per acre or some $3,400,000. I would like to see some figures to show how the land can be purchased. I think the figures they are using are from the original study from some years ago.

My fellow property owners have already built some of the orignal plan at their own expense and if they were allowed would eventually finish it on their own without any cost to the taxpayers.

The Corps and the city have spent how many millions talking and done nothing? The property owners stand ready and willing.

Every plan when finished calls for a 400 ft wide channel which must be maintained clear and free of debris. This last winter I contracted to the city to clean part of this channel which was on city property and with my fellow property owners on their property. I was stopped by the Corps of Engineers. The city finally obtained permission from the Corps for at the widest to clear 150 ft, not 400 ft. Another part controlled by the Coastal Commission to clear 25 ft not 400 ft.

When on the Citizens Committee every time I asked why we did not clean the channel now at a small expense to help prevent flooding, I was told, "If you do, you will wreck the cost ratio of the project".

What assurance do we have even if we build the Single Levee Plan that the Fish and Game, Fish and Wildlife, Coastal Committee, other interested parties will let it be maintained?

There are nine separate businesses including mine located on my property all involved in the auto recycling business. I am enclosing an attachment which lists these businesses.

The environmentalists reason for the the Single Levee Plan was to keep the north side as "open space". Since the design was adopted by the Corps, my neighbor Deutsch and his neighbor Lee, have built revetments on the north side for about 1 1/2 miles in the middle of the Single Levee area, and Lee has built a 3 lane bridge into the middle of the open space area where he has started construction of 700 residences. Deutsch has plans for about 50 acres of industrial along the river and about 1000 residences behind the industrial. The bridge has opened the north side causing the Single Levee Plan to lose its purpose even for the environmentalists — why waste all that money. Camp Pendleton is behind the Deutsch and Lee properties with plenty of "open space". This eliminates the need for more in this area.

Thank you for your time and consideration.

Inderrieden Road Service
Employs 8 family heads.

Bryans Auto Repair
Employs 2 family heads.

Peasley Auto Colision
Employs 2 family heads.

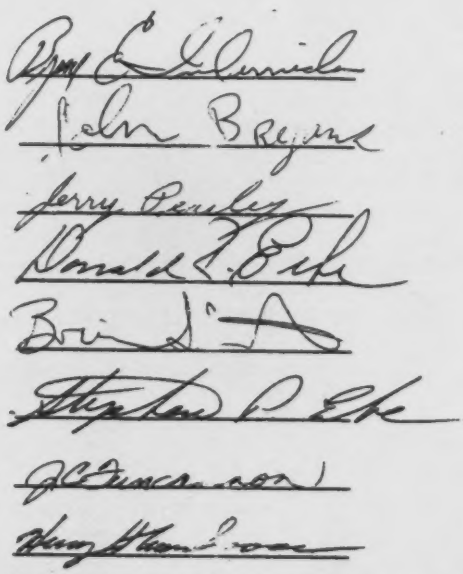
Don Erbe Co.
Employs 8 family heads.

All Foreign
Employs 7 family heads.

Cassan Auto Wrecking
Employs 6 family heads.

County Auto Pool
Employs 10 family heads

Gallants Truck Salvage.
Employs 11 family heads



Everyone realizes these are important and necessary to keep the junk cars from our streets. If these need to be relocated, everybody will say, "Locate these in some other place, not my neighborhood".

OPPOSITION—CACHE CREEK BASIN PROJECT, CALIFORNIA

STATEMENT OF CULTURAL HERITAGE COUNCIL

Our membership has instructed me to send you this note regarding your subcommittee hearings scheduled for March 28. During these meetings, you will be hearing a list of California projects needing funding. Among the projects on this list is the Cache Creek Basin Project ($800,000 for further studies). This is a fairly controversial project locally, as one alternative proposed by the Corps of Engineers calls for the construction of a large canal through the middle of a new State Park.

We would like to support the additional funding, but only if the Cache Creek Bypass (the canal) alternative is removed from further consideration. The Corps has presented several other alternatives in their 1979 feasibility report on this project which will take care of the flooding problem without endangering the land and resources of this new State Park.

We respectfully request that you consider including some control language in this bill which will remove this "bypass canal" alternative from further consideration.

Thank you for your time and consideration in this matter.

Sincerely,

CULTURAL HERITAGE COUNCIL
RESOLUTION #3

Resolution of opposition to the funding of the proposed Corps of Engineers Cache Creek Basin Project and the construction of the Cache Creek Bypass Channel.

Whereas; the Cache Creek Basin Project contains a provision to construct a 1.1 mile long channel through the heart of the Anderson Marsh State Park Project, and

Whereas; this channel will severely disrupt wetland habitat valuable to the economic wellbeing of Lake County, and

Whereas; the bypass channel will severely damage and/or destroy four Archeological sites which have been listed on the National Register of Historic Places, and

Whereas; at least two of these sites are known to contain human burials, and

Whereas; the bypass channel will alter the nature and integrity of the resources for which the property was acquired as a State Park Project.

Now Therefore Be it Resolved that the Board of Directors of the Cultural Heritage Council do hereby oppose the funding of the Cache Creek Basin Project and the construction of the Cache Creek Bypass Channel.

Ayes: John Parker, Cecil Brown, Dr. Paul Baldwin, Judy Luchsinger, Dr. Weldon Parker, Peggy Davis, Winifred Lea, Steve Ellis, Elvina Brown
Noes: none
Abstentions: Hope Hamilton, Dan Taylor
Absent or not voting: Dr. David Fredrickson, Rev. Robert Wilson, Hason Johnson

Attested to by _____
President

Lake County Board of Supervisors *March 7, 1985*
255 N. Forbes St.
Lakeport, CA.

RE: Cache Creek Basin Project Resolution

Dear Supervisors,

As you are aware, the Cultural Heritage Council has been following this project with interest since 1976. Some of our members were involved in the preparation of the original feasibility study which was finalized in 1979-80. We are very concerned about the flooding which occurred on Clear Lake in 1983 and the less severe flooding which occurs on an average of once every 10 years. We feel that some sort of action should be taken to alleviate this periodic flooding problem.

As most of you know, the problem goes far beyond our concerns around the Clear Lake Basin. The questions concerning erosion and siltation downstream are also very important.

Most of the possible solutions to the Clear Lake Basin problem have been discussed and further discussion will surely take place. However, we have come to realize that the Corps of Engineers proposal to enlarge the outlet channel has been generally accepted as the favored alternative by both Lake County and downstream officials.

In the Feasibility study prepared by the Corps, concerning the outlet channel enlargement, several alternatives were presented.

One of these was recommended by the Corps as being the most feasible due to economic considerations. I am referring, of course, to the Bypass Alternative. This bypass channel would be constructed alongside the original Cache Creek Channel for a distance of 1.1 miles, cutting across the Anderson Ranch Property. The dimensions of the channel have been outlined in the Corps Feasibility study; the channel itself will be 140 feet wide and the dredge spoil mound (located adjacent to the channel) will be 240 feet wide and 15 feet high (see attached sketch)

Since the feasibility study was released, however, the State of California purchased 900 acres of the Anderson Ranch Property adjacent to Cache Creek as a new State Park. This park has already provided a boost to Lake County's economy by bringing approximately $135,000 into the county in 1984 alone. State Park representatives estimate that, once developed, the park will see 200,000 visitors each year. The State Park System estimates that each park visitor spends between $7.00 and $10.00 in the local communities during their visit. Multiply this figure by 200,000 and you can begin to understand the importance which Anderson Marsh will play in the local economy. The benefits which this will have on Lake County's tourist industry are obvious.

This change in land use along Cache Creek creates a whole new set of problems and opportunities concerning the Corps of Engineers proposed project.

As a Board of Supervisors, you must balance the consequences of periodic flooding with the consequences of constructing a solution to the flooding. Fortunately, the Corps of Engineers has studied other alternatives to the Bypass and has listed these for consideration. One such alternative calls for widening and deepening the existing channel. This alternative would provide a way of taking care of the flooding problem while protecting the majority of the Anderson Marsh State Park for the enjoyment of the public.

Naturally, our major concern is for the protection of the new State Park and its resources. Our Board of Directors has already gone on record opposing the Corps of Engineers project based on the impact which it will have on the new park. While I can't speak for our whole Board, I feel that I could support the Corps Project if the Bypass was removed as a possible alternative.

I would strongly urge that you, as county supervisors, recommend to Congress that this project proceed, but only if the bypass alternative is removed from the project. The Anderson Marsh State Park Project is too important to the county's economy to be compromised when other alternatives exist to alleviate flooding.

Thank you for your time and consideration in this matter.

STATEMENT OF MAURA AND JACK SAMS, LAKEPORT, CALIF.

We want to go on record casting our "vote" against the Cache Creek by-pass.

We live in Lake County and are active in the community. Ours is a rural county with a rapidly increasing population and we are concerned about our new Anderson Marsh State Park but also very concerned about flood control. March in "83 found our county almost afloat in flood water. Control of this is of primary importance for we've seen first hand the devastation caused to our homes and our property. But another side of this is our concern about our Park that could possibly be wrecked by the efforts to control flooding.

We do not want the State Park damaged--it's a beautiful and natural area with important archeological sites and it is an important wildlife refuge. The proposed by-pass would go through and directly impact the area of the park that is the wildlife refuge.

The park is an important element in our local economy as we are a resort community with a growing population. The whole country needs more parks and we need this one in it's present state. There has to be an answer to the flooding problem that preserves the State Park.

We feel flooding could be minimized if not fully controlled by an improved drain from the lake. Cache Creek could be widened and/or deepened and the riffle at the lake outlet eliminated. Many studies have been made of this problem and surely there must be an answer that solves the problem without angering the people of Lake County. The by-pass is definitely not the answer.

STATEMENT OF LOWER LAKE COMMUNITY ACTION GROUP

The Lower Lake Community Action Group supports the recent action of our County Board of Supervisors to rescind the action of the previous Board and to vote against the proposed Cache Creek By-Pass Canal.

Our group is of the opinion that enough of the taxpayers' money has been spent on this project and feel that an additional study is not necessary.

An alternative to the by-pass, which this group strongly supports, is to deepen and improve the existing channel.

Thank you for your attention to this matter.

STATEMENT OF JAMES S. BERWICK, LOWER LAKE, CALIF.

I would like you to consider the dredging of the present Cache Creek channel and abandon the plan of the bypass canal, as the bypass canal would destroy the new Anderson Marsh State Park, which the State of California just paid $3.2 million to acquire. The $600,000 funding is fine as long as the bypass canal is not included in the further study.

The $600,000 could be used to help fund the flood control project. As this study has been going on for almost 60 years, it's about time something is done to start the project instead of further study.

Thank you for taking the time to read this statement.

NATIONAL ENERGY AND WATER DEVELOPMENT PROGRAMS

STATEMENT OF NATIONAL WILDLIFE FEDERATION

Please accept this letter for inclusion in the record of the Subcommittee's hearings on Energy and Water Development Appropriations for Fiscal Year 1986. The National Wildlife Federation, with 4.5 million members and supporters nationwide, including 51 state and territorial affiliates, is the nation's largest conservation organization. As you know, the Federation maintains a continuing interest in many of the programs under the jurisdiction of this Subcommittee.

Our recommendations for FY 86 Appropriations may be summarized as follows:

- o **Support the Administration's cost sharing and user fee initiatives for the Corps of Engineers.**

On February 20 of this year, the Department of the Army forwarded proposed legislation recommending the authorization of some 60 water resource development projects and establishing new formulae for cost sharing and user fees. The Administration's budget reflects this proposal by offsetting appropriated funds with over $400 million in non-Federal contributions to be generated by the new cost sharing and user fee legislation. We use the term "new" advisedly, since this administration has had legislative proposals to establish cost sharing and user fees for navigation projects pending before the Congress since early 1981.

We believe that delay and deliberation on water policy reform should be brought to a conclusion. We urge the subcommittee to support the Administration's cost sharing and user fee initiatives by limiting appropriated funds to levels requested by the Administration. The surest way to secure early action on an authorization bill for the Corps of Engineers is for this committee to honor the administration's request. Conversely, any action by the Committee to provide an extra $400 million in general revenues in the Energy and Water Appropriations Bill, to replace funds to be derived from non-Federal interests, will lead to further delay in resolving this issue and perhaps jeopardize the Appropriations Bill itself.

The Federation continues to support reasonable cost sharing and user fee requirements. Such provisions, we believe, will weed out economically dubious projects and encourage non-Federal interests to pursue less costly alternatives to traditional Corps projects.

- o **Delete funding requested to initiate construction on Randleman Dam, North Carolina, and Strube Lake, Oregon.**

We recommend that two projects be deleted from the list of Corps projects recommended for initial construction funding in FY 86 by the Administration. Randleman Dam, North Carolina, is a $138 million project originally authorized in 1968 and formulated without regard to currently available techniques for water demand management and water conservation investment. Similarly, Strube Lake, Oregon, is a $107 million peaking power project,

including a new reregulating dam, that was authorized in 1962 under conditions of electric power supply and demand vastly different from conditions in the Pacific Northwest today. Both projects involve environmental damage which we believe cannot be warranted when viewed against contemporary economic conditions.

- o **Withhold further appropriations for the Bonneville Unit of the Central Utah Project and the San Felipe Division of the Central Valley Project (CVP) until local interests contractually commit to the repayment of all reimbursable costs.**

The financial posture of two major Bureau of Reclamation projects now under construction are in critical need of reexamination by the committee this year: the Bonneville Unit of the Central Utah Project, and the San Felipe Division of the CVP. Without immediate action by the Congress and the Administration to secure greater commitments for the local repayment of reimbursable costs, the possibility looms large for either: a) an abandonment of costly, partially completed facilities similar to the experience of the Washington Public Power Supply System and other utilities with unmanagable construction cost overruns; or b) a major Federal bail-out of local water and power users beyond the scope of what was originally intended by Congress.

As currently proposed, the San Felipe Division will be the major component of the municipal and industrial (M&I) water supply system of the CVP. The Bureau has entered into long-term contracts with M&I water customers that contain lenient provisions and inadequate rates. The Inspector General of the Department of the Interior found in 1979 that "ineffective policies and ad hoc contracting ... heavily subsidize the beneficiaries of CVP at the expense of the taxpayers." Altogether, the Bureau's management errors documented by the Inspector General will cost the Treasury $1.2 billion by the end of the repayment period in 2038.

The issues raised by the Inspector General's audit have still not been resolved. We believe the time to secure greater non-Federal financial commitments to the San Felipe project is before, rather than after, the final millions of Federal tax dollars have been spent to complete the project and initiate delivery of water under contracts already known to be seriously deficient. It should be noted that these contracts make performance of all Federal obligations thereunder contingent upon Congressional appropriations. Given the gross inadequacy of the Bureau's actions to date, the committee should withhold the appropriations necessary to complete construction of San Felipe, including the $37.6 million requested by the Bureau for FY 86, to bring M&I water users back to the negotiating table with greater repayment commitments.

Similarly, the Bonneville Unit of the Central Utah Project was found by the Inspector General in 1980 to have M&I costs far in excess of the local sponsor's contractual obligation to repay. The Bureau still has not entered into a new contract with the local sponsor, although over $300 million have been committed to the project since the publication of the Inspector General's report.

The Bureau's representations to your subcommittee to keep construction funds flowing to the Bonneville Unit bear recounting. In January 1983, in support of its request for $101.6 million, the Bureau reported that a supplemental repayment contract was scheduled for mid-FY 1983. In January 1984, in support of its request for $104.8 million, the Bureau reported that a supplemental repayment contract was scheduled for December, 1984. In February of this year, in support of its pending request for $62.3 million, the Bureau reported that a supplemental repayment contract is scheduled for May, 1985. Yet on March 29, 1985, the Western Area Power Administration published proposals for developing and marketing power from the Bonneville Unit's hydroelectric powerplants with the following comment:

> Reclamation believes it is important to the feasibility and financial success of the Bonneville Unit that there be repayment assistance to the M&I water supply function from developers of the power facilities. Reclamation is proposing that the total amount of the M&I assistance should be $300 million. (50 FR 12621).

It can be seen now that the Bureau has been unable to secure local approval for a supplemental M&I repayment contract that would safeguard the Federal taxpayers' investment in the Bonneville Unit. Instead, the Bureau is now banking on novel and unproven financing arrangements in hopes of securing a precedent-setting cross-subsidy from power consumers to M&I water users. We believe no further funds should be appropriated for the Bonneville Unit until such time as the Bureau can present a fully executed repayment contract covering all reimbursable project functions. We believe that a $2.1 billion project, with far-reaching environmental consequences, cannot now prudently be funded without Congress having the benefit of a complete financing plan for its review.

- **Defer all funds for construction of the Garrison Diversion Unit, North Dakota, until the Congress has acted upon legislation to implement the recommendations of the Garrison Diversion Unit Commission.**

We believe that the plan developed by the Garrison Diversion Unit Commission is a commendable attempt to fashion a workable political compromise to the Garrison Diversion controversy. The Commission struck a compromise -- one that places greater emphasis on municipal and industrial water supply and reduced emphasis on irrigation. The Federation is prepared to support the overall framework of this compromise, so long as the State of North Dakota is prepared to do the same.

Several aspects of the Commission report will require the close attention of the authorizing committees in the development of legislation to implement the recommendations of the Commission. Not the least of these issues is the status of features of the originally authorized project not included in the Commission's recommended plan. In its request for FY 86 appropriations of $41.3 million, the Bureau depicted a $1.8 billion, 320,000 acre project, an amount equivalent to the sum of the originally authorized project and the Commission plan.

We cannot support funding the Garrison Diversion under such a loose interpretation of the project's ultimate configuration.

Until this and other ambiguities are clarified, which we trust will be soon, we urge that no construction funds be included in the Energy & Water Appropriations Bill at this time.

- **Delete funding requested for the Narrows Unit, Pick-Sloan Missouri Basin Program, Colorado.**

The Federation is strongly opposed to the Bureau of Reclamation's request for $500,000 to revive the Narrows Unit of the Pick-Sloan Missouri Basin Program in Colorado. This project is now nearly three times as costly, but no more worthy of support, than it was when funding was first terminated eight years ago. The project would require some 32,500 acres of land along the South Platte River, eliminating 15,000 acres of already irrigated land, destroying 15 miles of prime river-bottom wildlife habitat, and polluting downstream waters in order to provide heavily subsidized supplemental irrigation water. The cost of the project is now projected to exceed its authorized cost ceiling by 50%.

The U.S. Fish and Wildlife Service has issued a biological opinion on Narrows pursuant to the Endangered Species Act, finding jeopardy to the endangered whooping crane and its habitat downstream in Nebraska. We believe that no further preconstruction activities should be performed on this project until such time as the jeopardy opinion may be removed, and that the Fish and Wildlife Service is the appropriate recipient of funding for endangered species studies in the Platte River Basin.

Currently, 83% of the total flow of the South Platte River is used consumptively within Colorado. We believe that no pressing national or state need would be served by an allocation of Federal appropriations to the Narrows Unit for FY 86 or any time in the foreseeable future.

- **Support the Administration's initiative for improving cost recovery and amortization policies of the Power Marketing Administrations.**

The construction and operation of water resource projects frequently damage fish and wildlife habitat and often reduce instream flows. The underpricing of the water and power from Federal projects lead to overconsumption and waste of these scarce resources. Underpricing of hydropower has several consequences that are detrimental to the environment:

- Federal power subsidies undercut energy conservation efforts. Many energy conservation techniques and investments will not be judged to be cost-effective when measured against wholesale power costs of 5 to 20 mills per kilowatt-hour.

- Federal power subsidies lead to constant pressure for the construction of new dams and transmission lines, and the conversion of existing projects to more environmentally damaging "peaking" operation. Even in a time of excess generating capacity throughout the country, utilities -- especially those given preferential access to Federally generated hydropower, i.e., the rural electric co-ops and publicly owned systems -- remain hungry for Federal power. The reason

is that it is cheaper by far than any other wholesale source of power.

- Subsidized power distorts other natural resource decisions. Marginal irrigation projects throughout the West are premised upon the availability of power for pumping at below-market rates. Power subsidies in California facilitate the interbasin transfer of the huge quantities of water consumed in the Central Valley and in Southern California. Future diversions, such as Columbia Basin and Great Lakes diversion schemes, will undoubtedly seek power at below market rates.

For these reasons, we generally support the Administration's proposal for improving cost recovery from Federal hydroelectric projects through the various power marketing administrations (PMAs). These reforms are particularly critical for the Western Area Power Administration, the Southwestern Power Administration and the Southeastern Power Administration. Unlike the Bonneville Power Administration, which now operates within a regional planning process that is beginning to produce substantial environmental benefits, the remaining PMAs operate within no such planning structure. Their incredibly low rates encourage their customers to seek even greater allotments of Federal power -- power which can be provided only by environmentally damaging new hydro projects or by environmentally damaging peaking operations at existing hydro projects.

Even considering the established policy for pricing Federal power; that is, the recovery of Federal costs rather than the fair market value of electric power, most Federally generated power today is seriously underpriced. This is due, in our opinion and that of many qualified observers, to the relentless exploitation of administrative loopholes by non-Federal interests,
and to the ineffectual advocacy of the Federal ownership interest in water and power facilities by the agencies charged with their construction and management.

The pending Administration proposal may need some modification to avoid undesirable effects upon consumers. Nevertheless, the long-standing and well-documented criticism of current PMA repayment policies places the Administration proposal on solid ground. We urge the committee to consider it favorably.

- **Modify the authority for an expanded Pacific Northwest-Southwest Intertie, contained in the Energy & Water Development Appropriations Act for Fiscal 1985, to clarify the applicability of the Northwest Power Planning Council power plan and fish and wildlife program to power produced in the Northwest for export on the Intertie.**

Last year, the Energy & Water Appropriations Bill carried a rider authorizing a third alternative current intertie between California and the Pacific Northwest. When completed, this new transmission line will increase greatly the capacity of the Bonneville Power Administration and Pacific Northwest utilities to export electric power from the region.

We believe Congress should now clarify how the Regional Energy Plan and the fish and wildlife program developed by the Pacific

Northwest Planning Council apply to power produced for export on the intertie, as well as to power produced for consumption within the region. This is needed for at least two reasons. First, the new transmission capacity now scheduled for implementation can boost power exports to such a degree that the goals of the Planning Council may be undermined seriously if such power production is not brought within the scope of the regional plan. Secondly, the expanded market for Northwest power to be serviced by the intertie can support new conservation investment as well as additional power production, if properly integrated within the regional plan.

We believe the intertie access policy proposed here is administratively feasible and will not unduly limit the energy resources available to power customers.

- **Maintain essential natural resource conservation activities of the Tennessee Valley Authority (TVA).**

Appropriated funds support a wide variety of natural resource management functions within TVA. These functions include water quality monitoring, wildlife management, environmental education, and management of Land-Between-the-Lakes.

The National Wildlife Federation, at its annual meeting in March 1985, passed a resolution seeking restoration of funds to TVA for natural resource management. The resolution (copy attached) details some of the reasons why the Federation believes these funds should be restored.

The Federation and TVA have had a close working relationship over the years, including a number of joint projects. The National Wildlife Federation's Raptor Information Center has worked with TVA biologists on the restoration of peregrine falcons and eagles in the TVA region. A current project involves the Federation and TVA staff scientists in the design of artificial wetland systems that will help to purify sewage effluents and maintain water quality. All of these projects are demonstration programs advancing principles that can be applied nationwide; all are in jeopardy because of the proposed reduction in funds.

Thank you for the opportunity to present these views for the record. We look forward to working with the Subcommittee on these and related issues in the weeks ahead.

STATEMENT OF WATER RESOURCES CONGRESS

I am Gary P. LaGrange, Chairman of the Water Resources Congress. In the work-a-day world I am Executive Director of the West St. Mary Parish Port, Harbor and Terminal District in Franklin, Louisiana.

Water Resources Congress very much appreciates this opportunity you have granted to us to testify on the proposed Fiscal Year 1986 budget on water resources projects throughout the United States. While my tenure as Chairman of WRC is but a page in the history of our association, which dates back to the turn of the century, I am here like my predecessors in support of all the multiple-benefits of controlled waters in the form of flood control, navigation, irrigation, municipal and industrial water supplies, hydro-electric power generation, recreation and fish and wildlife conservation.

In less than two months, Water Resources Congress will hold its annual meeting here in Washington, D. C. This year our theme will be "Do You Know Where Your Children's Water Will Come From?" This is the question that is in many people's minds these days especially in the big manufacturing cities in the Northeast and the Midwest as well as in the sprawling communities in the sun-belt areas of our country.

While municipal and industrial water users ponder this question, agricultural water users are just as perplexed. So too are the navigators who are concerned that the structures that hold and direct the water will still be operable to give passage to the barges that carry the raw materials and finished products to and from our farms and factories.

I think you will agree that people like ourselves who pass the laws that keep the waters flowing and earn our living from guaranteed water supplies, have reason to be concerned about the future of water resource development. Our water project authorization pipeline is drying up. It's been almost ten years since we authorized any new water projects. And the scary part of this whole problem is that if we started the authorization process rolling this very day, some twenty-years would pass before the completion sign was posted on any of these projects. Twenty-years comes mighty close to being a generation.

The old saw about a chain being no stronger than its weakest link is certainly apropos in today's scheme of things. Billions are being spent to keep our nation strong militarily. But how can we maintain our overall strength - our industrial and agricultural might - if our water has to be rationed because its in short supply or our conveyance systems are worn out?

There is no such thing as a quick fix to nation-wide water problems. It's taking a long time to make us strong on the national defense front. It will take just as long to bring back our water resource programs.

Water resource development today is, for the most part, relagated to caretaking and rehabilitation work. A good example of this is demonstrated by the Corps of Engineers civil works budget for Fiscal Year 1986 in which the largest expenditure requested would be applied to Operation and Maintenance work.

Water Resources Congress supports the budget requests of the Corps of Engineers and the Bureau of Reclamation for Fiscal Year 1986 although Reclamation appears to also be headed for a

mark-time status with its Fiscal Year budget down $230 million from last year's energy and water development appropriation act.

Reducing expenditures for water resources development in the name of cutting the Federal deficit is just the dropping of the first shoe. The falling of the other shoe is contained in the pay-as-you-go philosophy contained in cost sharing and user charge proposals.

Ports are being asked to pay from 70 to 100 percent of the Operation and Maintenance costs based on depth and tonnage. Non-federal funding at the 100 percent mark would be applied to hydro-electric power projects, municipal and industrial water and 50 percent for recreation. Flood control would be assessed 35 percent with the same percentage for hurricane and storm damage reduction and agricultural water supply.

It's a misnomer to use 100 percent and cost sharing in the same breath. When payments reach 100 percent the payee is picking up the tab for the whole ball of wax. Seventy-percent is also a lop-sided cost sharing arrangement.

Actually, cost sharing has been the practice in water resources development for years and years. Ports, terminals and bank-side industries are funded by local communities and private industry and represent huge expenditures in the development of our inland and coastal waterways. Government expenditures for navigation improvements to our Great Lakes and inland waterways date back to 1824 and total more than ten billion dollars. Approximately $7 billion of this amount has been appropriated for the inland waterways. These figures are a matter of record, but investments by non-federal payees are practically unknown except to say they represent billions and billions of dollars.

The irrigation farmer, the manufacturer, the shipyards and the barge line operators pick up the tab where the Federal Government leaves off. Farmers pay for their irrigation water deliveries from Federally-built irrigation systems; barge line owners pay an ever increasing fuel tax; hydro-electric power users pay for their power; local flood protection districts are required to furnish the necessary rights of way and perform operation and maintenance work on the levees. So cost-sharing is nothing new. It's the upping of the ante that concerns Water Resources Congress.

Perhaps one solution to our current dilemma over cost-sharing and user fees may be found in the income tax check-off system. People might indicate on their income tax form if they want a small portion of their tax dollars to be set aside for payment of water resources projects.

But while we wrestle with cost sharing, we should at the very least get on with the job of completing unfinished projects.

The Garrison Diversion Project in North Dakota immediately comes to mind. I am by no means a member of the younger generation, but I was not yet around when Congress enacted the 1944 Flood Control Act, the legislative vehicle which, among other things, authorized the Garrison Project. Here we are 41 years later still studying, evaluating and examining the justification for Garrison.

We have moved from the DC-3 to the Space Shuttle; we have witnessed the invention of the picture right now camera; front wheel drive, the disposable diaper and the micro-wave oven

have all been introduced in this span of years, but we haven't completed the Garrison Diversion Project.

I wonder how many water projects completed in the last forty years could have passed the many tests placed on Garrison. Water Resources Congress wholeheartedly endorses the $41.3 million requested by the Bureau of Reclamation for Fiscal Year 1986 and respectfully urges that the project be pushed to completion without further delay.

The Narrows Unit in Colorado, another on-again-off-again water resources venture, should be fast-tracked to the construction stage.

The City of Waterloo, Iowa and the Corps of Engineers are winding up a joint venture flood control project. Bridge construction at an estimated cost of $2 million is all that remains to closing out the project which began 20 years ago. Funds for this work appeared in the Corps' budget requests for Fiscal years 1984 and 1985. We request they be included in the F.Y. 1986 budget for construction.

The Cooper Lake and Channels project on the South Sulphur River in Delta and Hopkins Counties, Texas is another project growing old before completion. Finally liberated from legal entanglements this project deserves the $3 million contained in the Corps F. Y. 1986 budget.

Whenever the subject of critical bottlenecks on our nation's inland waterway system arises, four navigation projects immediately come to mind. These are the replacement of the Bonneville Lock on the Columbia River; a new William Bacon Oliver Lock on the Black Warrior River in Alabama; a second chamber at Lock and Dam 26 on the Mississippi River and Gallipolis on the Ohio River. Locks and Dams 7 and 8 on the Monongahela River and Winfield Locks and Dam on the Kanawha River are also in need of authorization and construction.

On the subject of project authorizations, Water Resources Congress supports and calls for early passage of S. 366, the bill introduced by Senator James Abdnor. This measure would contribute significantly to the answer as to where our children's water will come from.

On another front WRC supports construction of a sediment retention structure on Mount St. Helens to provide protection from flooding in Cowlitz County and to remove any threat to navigation on the Columbia River.

We would also like very much to see authorization of the Calcasieu River and Ship Channel to a 45 foot depth for the ship channel.

WRC urges the enactment of legislation that would strengthen the tax-exempt status of bonds issued by public entities to provide for the development of ports, harbors and navigation facilities, water supplies, sewage and solid waste disposal facilities, air and water pollution control facilities, and the production and marketing of electric energy without regard to the area in which such services are provided and without regard to whether the purchaser of such services is a public or private entity; and to oppose any legislation or any rules or regulations of federal agencies that would in any way limit, restrict, or erode the tax exempt status of such bonds.

While the need to reduce federal expenditures is recognized, it is equally apparent that there is an urgent necessity to restore and expand the Nation's infrastructure if the needs of our citizens are to be met. The states and their political subdivisions stand ready to meet their responsibilities in the achievement of these dual objectives; but in order to do so, they must have unimpaired access to tax-exempt financing for public purpose projects, including but not necessarily limited to, those projects presently defined as "exempt activities" in the Internal Revenue Code.

Water Resources Congress urges that Congress enact legislation authorizing storage in existing reservoirs still held by the federal government that is not committed to more important or essential use to be re-allocated to water supply and sold to non-federal governmental sponsors at its original cost recovery rate, as prescribed by the Water Supply Act, and not at hypothetical reservoir replacement construction and interest cost prices. This will reaffirm the intent of the Water Supply Act of 1958, be compatible with recent Congressional actions and statements of policy in connection with hydro-power, help to solve water supply problems nationwide, and instead of creating a budgetary drain from appropriations for new projects, will allow the Treasury to recover much of the heretofore non-reimbursable construction and interest costs of existing federal projects that prohibitive "replacement cost" pricing would prevent it from recovering.

It is our hope that Congress would take immediate steps to amend the Endangered Species Act of 1973, as amended, to provide in the application thereof for a balance between human requirements and the species of wildlife allegedly endangered. We would also urge that the law be amended to prohibit use of the Act to impair, supersede, or abrogate the development of rights to water, water and power projects, and reservoir sites obtained under state law and Interstate Compacts.

Water Resources Congress views with serious misgivings the possibility of the Corps of Engineers and the Bureau of Reclamation being consolidated as proposed, according to news stories attributed to the Office of Management and Budget. Either way, the Corps being merged with the Department of the Interior or the Bureau being absorbed by the Corps, would be a disservice to water users who have, down through the years, looked to these two agencies for the development and management of our water resource programs. Each agency has a separate function and responsibility.

Before any further action is taken on a proposed merger of the Corps and the Bureau, Water Resources Congress urges a detailed study of the two agencies' missions be undertaken by the users of their particular services and expertise. WRC, as the oldest and broadest water resources organization in the Nation, volunteers to serve in such a study or to contribute to this undertaking as discussion points are formulated.

Merger of the two agencies has been proposed on other occasions, starting with the Truman Administration. On each of these occasions, the idea was scrapped and we hope the current proposal will meet with the same fate.

Water Resources Congress appreciates the immense contributions this Committee has made to a well-conceived and sound water resources development and management program on behalf of water users throughout our Nation.

Thank you very much.

Statement of National Rural Electric Cooperative Association

Mr. Chairman, my name is Morgan Dubrow, Chief Engineer of the National Rural Electric Cooperative Association (NRECA). NRECA is the national association of over 1000 rural cooperatives which supply central station electricity to some 25 million people in the rural areas of 46 states.

On February 25, 1985, Bob Bergland, Executive Vice President, sent a memorandum to every member of Congress expressing our strong opposition to the OMB budget on power marketing administrations' rates. This unprecedented proposal would increase the payment for Federal power marketing administrations' (PMA) power by $1 billion more than that required to meet payout. At least three-fourths of our rural electric systems already must charge rates higher than neighboring power systems. A copy of the memorandum is attached.

NRECA supports the F.Y. 1986 budget request for the Corps of Engineers, the Bureau of Reclamation, the Department of Energy's PMAs, and other DOE energy programs. Our support of the cost-sharing proposals set out in the Bureau's and Corps' programs is conditioned on criteria under which the Federal Government selects and operates the projects, protects preference, and provides for the sale of power by the PMAs at the lowest cost as presently required by law. We also support DOE's nuclear programs for safety, enrichment, breeder reactor systems, nuclear waste disposal, advanced converters, and high temperature gas reactors. NRECA emphasizes the need for:

- $12.4 million for new construction starts for the Bureau of Reclamation, and $21.1 million for new construction by the Corps of Engineers.
- $60 million for the Central Valley Project, California.
- $23.0 million for the Richard B. Russell Dam, Georgia-South Carolina.
- $41.3 million for Garrison Irrigation Project, North Dakota.
- $5.7 million for Harry S. Truman Dam, Missouri.
- $173.5 million for Central Arizona Project, Arizona.
- $62.3 million for the Bonneville Unit of the Central Utah Project, Utah.
- $30.7 million for Columbia Basin and other Pacific Northwest projects.
- $5.0 million for Atmospheric Water Resources Management.
- $30.0 million for Dallas Creek and Dolores Project.
- $254.9 million for the five Federal power marketing agencies.
- $424.6 million for the nuclear programs.
- $39.0 million for modular high-temperature gas reactors.

At our 43rd annual meeting in New Orleans in February 1985, our members again unanimously passed resolutions supporting appropriations for a number of water resource and hydroelectric projects throughout the United States. NRECA encourages the Congress to fund plans and construction for comprehensive water resource projects including hydroelectric power development.

New Construction Starts

NRECA supports the F.Y. 1985 budget to provide $12.4 million for new construction starts by the Bureau of Reclamation at Buffalo Bill, Head Gate Rock, and the Boulder Canyon Visitors Center. We note that $21.1 million in new construction funds is requested by the Corps of Engineers. We strongly support the budget proposal for the Corps to join with the Sam Rayburn Municipal Power Agency and the Southwestern Power Administration in a three-party agreement to develop power at the Town Bluff, Texas project; this power will be marketed to preference customers by the Southwestern Power Administration.

The budget requests of both the Bureau of Reclamation and the Corps of Engineers are far less than the F.Y. 1985 requests; i.e., much less than if the budget had been frozen at the F.Y. 1985 level ($208 million less for the Bureau of Reclamation and $461 million less for the Corps of Engineers).

We will continue to examine each of the Administration's proposals for new hydroelectric facilities as this Subcommittee and the Congress has done on a project-by-project basis. We will examine proposed projects to assure that:

(1) preference is fully protected; (2) the Federal Government selects, develops and operates the projects; and (3) power produced is marketed through the power marketing administrations at the lowest possible cost.

Central Valley Project

We support the appropriation of $60.0 million in F.Y. 1986 for the Central Valley Project. The Auburn-Folsom South Unit has a potential of 300 MW of hydroelectric power with the possibility of an additional 400 MW for pumpback units. Auburn Dam funds are not in the budget pending arrangements for financing with local interests; nonetheless, we request that additional funds be appropriated for the Bureau of Reclamation to begin construction of Auburn Dam.

Richard B. Russell Dam

Funds in the amount of $23.0 million should be appropriated in F.Y. 1986 for continued construction of the Richard B. Russell Dam Project on the Savannah River between Georgia and South Carolina. It will provide 600 MW of needed hydroelectric power, 300 MW base load and 300 MW of pumpback power.

Garrison Irrigation Project

We support $41.3 million in F.Y. 1986 to provide funds for the New Rockford Canal, distribution system for the Oakes Test Area, and other associated facilities.

Harry S. Truman Dam and Reservoir

We support the appropriation request for $5.7 million in F.Y. 1986 to continue construction at the Harry S. Truman Dam and Reservoir which will enable the use of the full hydroelectric potential at this valuable project.

Central Arizona Project

We urge the Subcommittee to appropriate $173.5 million required in F.Y. 1986 to continue the orderly construction of the Central Arizona Project which is vital to the water supply for the State of Arizona. This would provide for the delivery of water to Phoenix as scheduled. We support additional funding of the project at the Bureau's full capability by adding $20.0 million. This would enable the Bureau to meet water delivery dates and provide water to all units of the project.

Bonneville Unit, Central Utah Project

We request that the Subcommittee appropriate $62.3 million in F.Y. 1986 for construction of the Bonneville Unit of the Central Utah Project which has a potential of 144 MW of hydroelectric power.

Columbia Basin and Other Pacific Northwest Projects

We support F.Y. 1986 appropriations of $19.4 million for the Columbia Basin Project, including river basin stabilization below the Third Powerhouse at Grand Coulee; $14.0 million for Chief Joseph power plant additions; and $7.3 million for the Second Power Plant at Bonneville Dam.

Atmospheric Water Resources Management

We support the F.Y. 1986 $5.0 million request to continue the cloud seeding technology being developed by the Bureau of Reclamation to increase water supplies in the arid West.

Dallas Creek and Dolores Projects, Colorado

We support the appropriation requests for $5.6 million to produce 4.2 MW at Dallas Creek and $24.4 million to produce 11.7 MW at Dolores projects.

Federal Power Marketing Agencies

NRECA supports the $254.9 million for F.Y. 1986 appropriation request for Federal power marketing agencies: $207.5 million for the Western Area Power Administration, $14.7 million for the Southeastern Power Administration, $29.5 million for the Southwestern Power Administration, and restoration of the $3.2 million for the Alaska Power Administration. We also support the Bonneville Power

Administration's $263.0 million budget funded through its self-financing revolving fund procedures. We suggest that similar revolving funds for the other power marketing agencies would be desirable and we support proper legislation to achieve this end.

The five power marketing agencies continue to do well in carrying out their programs. They continue to market power from Federal projects to encourage widespread use in accordance with preference laws. At the same time, power is sold at rates which recover all costs--interest, amortization, operation and maintenance over the project repayment period as established by the Congress.

Nuclear Programs

Our association has resolutions supporting nuclear power and nuclear research programs. We request the Subcommittee to provide funds for the F.Y. 1985 budget request of $424.6 million for nuclear programs. These funds are vitally needed to continue development of nuclear technology for improved safety, waste management, enrichment, reactor standardization and other improvements. This advanced technology is essential for continued development and maintenance of a viable nuclear industry and to support the ongoing nuclear power program which provides over 13 percent of our nation's electrical needs. We urge the Subcommittee to provide all the funds requested and especially wish to support the following programs:

- o $213.3 million for advanced breeder reactor technology
- o $11.7 million for nuclear waste technology
- o $105.2 million for converter reactor systems
- o $35.1 million for civilian waste research and development
- o $30.5 million for advanced nuclear systems

High Temperature Gas Reactors

NRECA recommends the F.Y. 1985 funding level of $35.0 million for the modular high temperature gas-cooled reactor program. These funds will support the Title I Preliminary Design Work and a Fast Track Program aimed at test facility licensing for this program. We support, in addition, $1 million for capital equipment needed for the program and $3 million for the spent fuel treatment work performed in connection with this reactor type.

NRECA is a member of Gas-Cooled Reactor Associates, a utility organization supporting the development of the high temperature gas-cooled reactor for deployment in the United States for electricity generation. Last year we testified at some length in support of this program and are pleased to report that the participants involved in the Gas-Cooled Reactor Associates and the Department of Energy program have selected a design concept from the studies that were undertaken with the F.Y. 1985 funding. They are proposing a test reactor in the range of 250-350 MW thermal (120-140 MW electric) contained in a steel pressure vessel that will employ a helium coolant and a graphite core. These units would be modular and factory fabricated for incremental additions for the electric utilities. The concept has radiation levels, even during the most severe hypothetical accident conditions, at such a low level that evacuation plans would not be required; moreover, the users' investment would not be jeopardized because of the system's passive and inherent safety characteristics.

A small pilot reactor built in Germany of about 50 MW thermal has successfully been operating, demonstrating some of these capabilities for 18 years. We believe such a system has the potential for easing public and investor concerns and bringing about the needed re-entry of nuclear power into the nation's utility grid. The economics and the passive safety will need to be demonstrated, and a test facility seems to be the approach to establishing this system.

We, in the NRECA, of course, are vitally interested in the potential for small nuclear systems which could be utilized in some of the larger cooperatives in the United States.

Finally, Mr. Chairman, we support $201.6 million for other utility-related programs in the Department of Energy, among which are electric energy, energy storage, solar, geothermal, hydroelectric and others. NRECA specifically supports an amount of $30.0 million for electric energy systems research and $19.5 for electric storage systems research. Testimony on the need for these items has been submitted by Lowell Endahl, our Manager of Energy Research and Development, to the Energy Research and Production Subcommittee on March 7, 1985.

We appreciate this opportunity to testify in support of these vital programs.

NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION
1800 Massachusetts Avenue, N.W. Washington, D.C. 20036/202-857-9500

February 25, 1985

TO: Members of Congress

FROM: Bob Bergland, Executive Vice President

SUBJECT: Impact of OMB Budget on Power Marketing Administrations' Rates

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We are deeply concerned over the administration's budget proposal which radically changes the policies and practices controlling repayment of the cost of Federal multipurpose power and water projects. Under the Administration's plan, the consumers of electric cooperatives in thirty-four states will pay at least a billion dollars more for their electricity every year.

The changes suggested by the Office of Management and Budget are contrary to the methodologies for setting rates which were presented to and approved by Congress in authorizing these projects. Additionally, the proposed repayment schemes are inconsistent with the fundamental rate-making principles used by every state utility commission and the Federal Energy Regulatory Commission in establishing and approving rates for electric utilities.

More than half of our rural electric systems already must charge rates higher than neighboring power systems. The power sold to our 650 member systems by the Power Marketing Administrations (PMA's) is the only low cost source of energy; this PMA power is similar to the imbedded cost enjoyed by other utilities that have older generating plants on their systems.

These rate increases will severely impact our electric cooperatives and their members at a time when they can least afford it. Local economies already reeling from economic downturns will be further dampened as energy sensitive industries such as food processing, smelters, and small manufacturers shut down or relocate. Farmers already unable to recover the actual costs of their crops will see their irrigation bills rise with no prospect of recovering their increased costs.

We believe it grossly unfair that electric cooperatives and public power systems be singled out to pay 40-150% more for their wholesale electricity. Rural electric cooperatives across the country made a commitment to the Federal government to help build the infrastructure of America by buying the power output from these Federal multipurpose dams at a time when that power was often more expensive than available alternatives. Rural electric systems' purchases of Federal power also helped to finance irrigation, recreation, and fish and wildlife protection. The electric cooperatives have kept their side of the bargain.

We urge you to oppose any effort to artifically alter the long established rate and repayment practices of the Power Marketing Administrations.

PENNSYLVANIA, NEW JERSEY, NEW YORK, AND DELAWARE PROJECTS

JOINT STATEMENT OF PORTS OF NEW YORK AND NEW JERSEY

Representing Also:

Bayonne Chamber of Commerce (NJ)
Brooklyn Chamber of Commerce (NJ)
Chamber of Commerce Borough of Queens (NY)
City of New York Port Council
Commerce and Industry Association of New Jersey
Downtown Brooklyn Development Association (NY)
Greater Newark Chamber of Commerce (NJ)
Hudson County Chamber of Commerce and Industry (NJ)
International Longshoremen's Association
Jersey City Housing & Economic Development (NJ)
Local 333-United Marine Division
Maritime Port Council of Greater New York and Vicinity
New Jersey Alliance for Action
New Jersey State Chamber of Commerce
New Jersey Citizens Transportation Council
New Jersey Industrial Development Association
New York Board of Trade
New York-New Jersey Port Promotion Association
New York Shipping Association, Inc.
New York State Department of Environmental Conservation-Region II
Save Our Port
Staten Island Chamber of Commerce (NY)
The Maritime Association of the Port of New York
Union County Chamber of Commerce (NJ)
Union County Division of Planning & Development (NJ)
United New Jersey Sandy Hook Pilots Benevolent Association
United New York Sandy Hook Pilots Benevolent Association
West Side Association of Commerce in the City of New York, Inc.

I am Anthony J. Tozzoli, Director, Port Department of The Port Authority of New York and New Jersey, with executive offices at One World Trade Center, New York, New York 10048. It is my privilege to summarize the recommendations of the Port of New York and New Jersey with respect to Federal appropriations in Fiscal Year 1986 for deepwater port navigation projects under the jurisdication of the U.S. Army Corps of Engineers' Civil Works Program. I am accompanied by The Honorable Borden R. Putnam, Commissioner of Commerce and Economic Development in the State of New Jersey, and The Honorable Susan Frank, Commissioner of Ports and Terminals of the City of New York. Following my summarization, each of us will give brief supporting testimony for those projects in which we are serving or plan to serve as the agency of local cooperation, or which are logically within our respective jurisdictions. I thank you, Mr. Chairman, and the members of your Subcommittee, for affording us this time to make our needs known to you.

Our mutual interest is directed toward a total of eight deepwater port navigation projects, of which three are recommended for funds somewhat in excess of those contained in the Federal Budget. These three are:

- the Kill van Kull-Newark Bay Channels Study Project, budgeted for $600,000, but for which port interests urge $700,000;
- the Arthur Kill Channel-Howland Hook Marine Terminal Channel Study Project, for which no funds have been budgeted, but for which port interests urge $200,000; and
- the New York Harbor Collection and Removal of Drift Construction Project, budgeted for $3,700,000, but for which port interests urge $5,000,000.

For the remaining five projects, port interests will not request additional funds beyond the $400,000 budgeted for a study project, namely, the New York Harbor and Adjacent Channels, nor for the total sum of $14,656,000 budgeted for the maintenance of the Newark Bay, Hackensack and Passaic Rivers, Bay Ridge and Red Hook Channels, New York and New Jersey Channels, and New York Harbor Projects. However, the absence of a request for additonal funds for these projects should not be interpreted as a signal that they are not of equal importance, especially those involving maintenance, to the deepwater shipping of the port.

Kill van Kull-Newark Bay Channels

Let me now address the justification for our recommended funding increases in two of the above projects. An especially critical need is the Kill van Kull-Newark Bay Channels Study Project. Authorized as a study by Congress in 1972, this project would deepen the approaches to the Port Authority's complex of container, general cargo and bulk cargo marine terminals in Elizabeth and Newark, New Jersey, from their existing 35-foot

depth, to as much as 45 feet, including several needed widening areas. The ship lines using these facilities have put us on notice that they cannot and will not tolerate further delays in the provision of adequate water depth for their growing fleets of larger vessels.

To meet the shoreside needs of this fleet, the Port Authority is developing a Port Development Plan for container terminal expansion and modernization, including $270 million for facilities at Port Newark and Elizabeth, New Jersey and Howland Hook, Staten Island. Thus, we must have a construction start in the approach channel by Fiscal Year 1986. Since both the Department of the Army and Congress have recommended construction of this channel improvement in proposed or pending public works legislation, we are recommending an additional appropriation of only $100,000 to be added to the $600,000 earmarked in the Budget, for a total of $700,000, so that construction can at least be started late in Fiscal Year 1986.

New York Harbor Collection and Removal of Drift

The second is the New York Harbor Collection and Removal of Drift Construction Project. Initially authorized for construction in 1974 and underway since 1976, this project is aimed at the removal of 2,230 sunken hulks and 149 decaying shore structures that are the source of dangerous and costly harbor drift. Major advances in waterfront clearance have been made to date, and the project, which enjoys widespread bi-State community participation, is continuously gaining momentum as its benefits become increasingly known and visible. It is a project that involves non-Federal cost-sharing in the form of a one-third contribution for removal work, and a 100 percent financial responsibility for required repairs to those 182 shore structures considered repairable and usable.

In addition to its essential navigation benefits, the project opens the way for renewed land use and redevelopment, a reduction in the causes of fire, human hazard and rodent infestation, and in the process, improved waterfront aesthetics. Attached to my statement is a reprint of an article titled "Getting the Drift" which appeared in the November 1984 issue of the Port Authority's Via Port of New York and New Jersey magazine, and which further explains this project, which I submit with my statement for the record.

By increasing the approporiation recommended for this project from $3,700,000 to $5,000,000, waterfront cleanup work can be extended to other areas in Brooklyn, Bayonne, and on Shooters Island,the latter site located in the Arthur Kill between Elizabeth, New Jersey and Staten Island, New York.

I will now ask Commissioner Putnam to speak to his project interests.

* * *

Mr. Chairman and distinguished members of the Subcommittee, I am Borden R. Putnam, Commissioner of New Jersey's Department of Commerce and Economic Development. In that capacity I also serve as Honorary Chairman of the Department's Maritime Advisory Council. The Council was established to emphasize New Jersey's position as a maritime state and that industry's impact on our State economy. The creation of the Maritime Advisory Council marked a commitment by New Jersey to provide the private sector with an ombudsman to assist in coordinating statewide waterfront development and to promote Federal river and harbor projects of benefit to New Jersey and the region.

New York Harbor and Adjacent Channels

This Department was pleased to see $400,000 budgeted for the New York Harbor and Adjacent Channels Study Project in Fiscal Year 1986 to complete the feasibility report for the Claremont Terminal Channel and continue the Port Jersey Channel segments of this study. These studies, authorized by Congress in 1968 and 1980 respectively, were consolidated and initiated to determine the feasibility of deepening the privately maintained 24-foot deep Claremont and 35-foot deep Port Jersey Channels for commercial deep-draft navigation. The users of these channels urgently require deeper water to reduce shipping costs, increase their ability to continue to participate in the commodity export market, service growing fleets of larger vessels, and provide safer access to their facilities.

Although the Fiscal Year 1986 funding appears to be sufficient to

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complete the Claremont Channel study segment, I wish to urge that every effort be made to accelarate the Port Jersey Channel segment for completion as soon as possible before the scheduled June 1987 completion date. The Port Jersey Channel serves 10 container lines at a privately-financed, 100-acre facility, built at a cost of $50 million with on-site employment in excess of 600 people. During 1984, this terminal handled 363 vessel calls and more than 12% of the total container traffic in the New York/New Jersey Port. Consideration is also being given by the Port Authority to developing the adjacent 105-acre parcel for expanded marine cargo handling facilities.

We consider this project accelaration consistent with Congressional efforts to reduce unemployment and stimulate economic growth. The area in which the above study projects are located is urgently in need of economic stimulation. Before I defer to Commissioner Frank, let me state for the record that the State of New Jersey also fully endorses the project funding requests made by Mr. Tozzoli and to be made by Commissioner Frank.

Thank you.

* * *

Thank you Commissioner Putnam. I am Susan Frank, Commissioner of Ports and Terminals of the City of New York. As in previous years, New York City is joining with the Port Authority, and more recently the State of New Jersey, and the many maritime and civic organizations in the Port of New York and New Jersey to present to you our joint funding recommendations for Federal navigation projects in our harbor. The projects which Mr. Tozzoli and Commissioner Putnam have discussed are of great importance to our marine terminals. All three major marine terminal facilities in New York City - Howland Hook on Staten Island and Red Hook and South Brooklyn - are being modernized and expanded with a substantial investment of public capital funds. The appropriation of Federal funds to deepen our navigation channels is essential to the success of our local efforts, and to the future growth and vitality of our port facilities.

I would like to direct my remarks to one deepwater and one added shallow draft project which are of particular importance to New York City and for which we are requesting additional funding.

Arthur Kill Channel to Howland Hook Marine Terminal

The Corps of Engineers is completing its feasibility study, which was authorized by the Congress in 1979, to examine improving the existing channel to 42 feet below mean low water to the Howland Hook Marine Terminal, and to 40 feet below mean low water to the major private users, the Exxon refinery in Bayway, New Jersey and the Gulfport terminal on the Staten Island side of the Arthur Kill. We understand that the Corps expects to complete its final report and environmental impact statement in November 1985.

This project is of the highest priority to the City of New York. The Howland Hook Marine Terminal, already the largest marine facility in the City, is now undergoing a $5 million improvement program, and an $85 million expansion plan is being negotiated with the tenant, United States Lines. U.S. Lines last year introduced the first vessels in a new generation of jumbo containerships which will engage in worldwide service, originating in the Far East and continuing on to the United States and Europe. Howland Hook is one of only two East Coast ports to be involved in this service, which will result in a substantial increase in shipping through our port. Under present conditions, the jumbo ships have access to Howland Hook only at high tide. Deepening the Arthur Kill is vital if we are to provide efficient service, and it will result in substantial economic benefits for the port.

Unfortunately, no funds were recommended for the study project in the Fiscal Year 1986 Federal Budget. We are, therefore, requesting an appropriation of $200,000 to enable the Corps to proceed with continued planning and engineering upon completion of the feasibility study.

The Arthur Kill is connected to Upper New York Bay by the Kill van Kull. The deepening of both channels is essential if New York is to remain

competitive with its sister ports. With the Corps expected to complete its advanced engineering and design of the Kill van Kull-Newark Bay Channels Study Project by the end of the upcoming fiscal year as addressed by Mr. Tozzoli, we are requesting funding for the Arthur Kill so that these two projects, which are closely related, can proceed together.

Sheepshead Bay

Though the purpose of this port delegation is focused on deepwater projects, I would be remiss if I overlooked a key shallow draft project in the City of New York. Sheepshead Bay is home to the largest commercial and recreational fishing fleet on the East Coast. The existing Federal channel, which is six feet deep and 100 feet wide, is neither deep nor wide enough to allow free passage of the fishing vessels. They are subject to severe traffic congestion and a significant potential for accidents.

The Corps of Engineers' final detailed project report, published in February 1984, recommends that the Corps proceed with construction of a deeper and wider channel. Within the Bay, the channel is to be deepened to 10 feet below mean low water and widened to 200 feet. Outside the Bay, the channel is to be deepened to 12 feet below mean low water and widened to 250 feet. We request $250,000 to fund this construction.

As with the improvements to our marine terminals, this Federal action will support a major capital commitment by the City of New York. In addition to providing the local share of the channel improvement cost, we are planning a $4 million renovation of the piers to provide modern berthing facilities and other infrastructure improvements.

Thank you for your kind attention.

* * *

This concludes our statement, Mr. Chairman. I hope that we have conveyed to you and the members of the Subcommittee the sense of a carefully

and responsibily targeted program of budget increases aimed at avoiding unproductive time gaps in Corps of Engineers study and construction processes for projects either on the threshold of our well into the construction phase. We have tried to act in full consideration of the critical budget crisis that faces our nation and believe that an overall increase in the Federal Budget recommendation for the eight deepwater projects from $19,356,000 by $1,600,000 to $20,956,000, is, for the Port of New York and New Jersey, indeed modest. Though the increases are minor, the purposes they will serve are major We cannot ask for less, nor can these purposes be accomplished with less.

On behalf of Commissioners Putnam and Frank and myself, let me close by saying that we hope that the Congress will do its utmost to provide the additional funds we have requested. Thank you for your kind attention and concerns for our recommendations.

[Via Port of NY-NJ, November 1984]

GETTING THE DRIFT

When you are dealing with our massive New York-New Jersey harbor, every aspect of its operation takes on a scope of epic proportions. Take, for example, such seemingly routine concerns as drift removal. In the 1970s some 23.6 million cubic feet of material from over 2,200 derelict vessels and 100 deteriorated piers and structures had become a continuous source of drift in our busy waterways. The transition of the port from a break-bulk to a container operation, along with the disappearance of many railroad lighterage and terminal facilities, and the dispersal of waterfront industries to other locations, all constituted the technological changes that left behind obsolete waterfront structures and unwanted harbor craft. Aside from the resultant drift creating an expensive functional nuisance capable of causing damage to vessel hulls, propellers and rudders, the presence of abandoned harborside facilities was causing unsightly, unhealthy and unproductive waterfront conditions.

It was for these reasons that the *New York Harbor Collection and Renewal of Drift Project* was initiated in 1974, after a ten year study performed by the New York District Army Corps of Engineers. More familiarly known as the *Waterfront Clean-Up Project* this ambitious plan was designed to attack the problem of drift at its source (rather than on a piecemeal basis with drift collecting vessels alone) by demolition and disposal of derelict facilities. This was a cooperatively supported enterprise requiring federal, local and widespread community involvement.

Although it was a plan that everyone "had to love" because it would produce lasting aesthetic, functional and financial advantages for the harbor, it was not without its problems. As fate would have it, the project was delayed in New York when the city ran into its financial crises in the mid-1970s and could not raise its share of the demolition costs to take advantage of already appropriated federal and state grants. In New Jersey the project was complicated by the fact that many of the harbor sites were privately owned and not functioning as harbor facilities and, therefore, had no particular interest in the concerns of the waterways. Thus, organizing the various "reaches" (consolidated strips of waterfront that could be improved together in a cost effective sequence) was a challenge. Finally, the program had to address the problem of what to do with the tons of debris once it was collected. In keeping with guidelines and special permits issued by the Environmental Protection Agency, burning drift twenty miles at sea during proper wind conditions is usually the solution, although some timber and rock is used, where suitable, as landfill.

To participate in this program, property owners agree to comply with newly legislated standards to maintain their waterfront properties in a drift-free manner and prevent a recurrence of deterioration in the future. It is hoped this will permanentize the gains made by the project, which is essentially a voluntary one. It has progressed according to sound engineering and economic criteria established by the Coordinating Committee and the Corps of Engineers. In general, those areas that are the most visible, have the greatest immediate potential for development, or those which can be quickly and economically improved are given preference. These criteria are intended to bring the greatest benefits to fruition as soon as possible.

To help organize the complex requirements of this massive project, The Port Authority of New York and New Jersey serves as a chair for the Waterfront Project Coordinating Committee. This group is composed of the non-federal supporters of the project, with the two states being represented by the New Jersey Department of Environmental Protection and the New York State Department of Environmental Conservation. The municipalities of New York City, Jersey City, Bayonne, Newark, Elizabeth and Hoboken are also active participants who join forces several times a year to plan and monitor work progress.

In New Jersey, the project has thus far cleaned-up reaches in Jersey City and Elizabeth, with Hoboken underway and work soon to begin in Bayonne. The present "showcase" of the Waterfront Clean-Up Project is beautiful Liberty State Park, a former eyesore of collapsing piers, stubble piling, rotting hulks and ramshackle waterfront structures that blighted the background of the Statue of Liberty. Today, Jersey City's unique waterfront park features cultivated lawns, planted trees, parking, boat launching and ferry rides, an environmental center, a rehabilitated ferry terminal and an abundance of natural plant and animal life overlooking a beautiful harbor and the skyline of New York. A similar but smaller transformation occurred at Elizabeth on the waterfront of the Arthur Kill.

In New York the project has reclaimed prime waterfront property on Manhattan's valuable East River shoreline between the Battery and 90th Street. Five piers were removed and fifteen waterfront facilities rehabilitated. This quickly led to construction or improvement of valuable facilities for the city, including the Water Club Restaurant between 30th and 34th Streets, construction of the Environmental Learning Center for Children at 90th Street, a summer activities center at Pier 11 with food vendors and music during lunch (used for parking in winter), a heliport under construction by the Port Authority, and a proposed large housing development dubbed Manhattan Landing. The now famous South Street Seaport was another development that benefitted from the harborside clearing. In terms of ratables and quality of life, this reach too stands as a model. Plans are being made to clear a second reach between 36th Street on the west side of Manhattan to Sputen Duyvil, where the Hudson meets the Harlem River.

On Staten Island the Northern Shore reach is being inventoried for future clean-up and subsequent development. Demolition is presently underway at Stapleton where construction of a naval base is being given serious consideration.

Brooklyn has two reaches in the planning stage, one which runs from the Manhattan Bridge to the Gowanus Creek. Brooklyn's Erie Basin and the development of the Port Authority's new Fishport will tie in with this project. The second reach extends from the Hamilton Avenue Bridge and follows the shoreline to Owls Head Park.

Shooters Island is an uninhabited dot of land which sits directly in the middle of the Kill Van Kull, one of the harbor's most traversed waterways leading to the busy facilities at Port Newark-Elizabeth and Howland Hook Marine Terminals. Its derelict waterfront was a major source of drift-related damage for many years. The island is unusual in that it is jointly owned by three municipalities—New York City, Elizabeth and Bayonne. Access to the island is difficult. Dredging will be required for equipment needed to remove the multitude of dry-docks, barges and assorted debris. Once clean-up efforts are completed, the island will provide a safer habitat and rookery for snowy ibis, egrets and herons, among other favorites treasured by local ornithologists. The Audubon Society wishes to declare Shooters Island a natural preservation area.

The Waterfront Clean-Up Project is a unique program, summoning the cooperative efforts of federal, municipal and private interests. It is not only a boon to safer navigation but is a means for restoring vast unproductive sections of waterfront to active port, recreational, aesthetic, residential and natural uses.

STATEMENT OF NEW JERSEY DEPARTMENT OF COMMERCE AND ECONOMIC DEVELOPMENT AND MARITIME ADVISORY COUNCIL

Supported by:

Maritime, Port & Civic Organizations

Delaware River Port Authority
International Union of Operating Engineers
Joint Executive Committee (PA)
New Jersey Alliance for Action
New York Sandy Hook Pilots Association
PENJERDEL Council (PA, NJ, DEL)
The Delaware River & Bay Authority
The New York Towboat & Harbor Carriers Association
The Pilots Association for the Bay & River Delaware
The Port Authority of New York/New Jersey
South Jersey Port Corporation

Mr. Chairman and members of the Committee, my name is Borden R. Putnam and I am the Commissioner of New Jersey's Department of Commerce and Economic Development, and in that capacity serve as Honorary Chairman of the Department's Maritime Advisory Council. This council was established within my Office of Business Advocacy to emphasize New Jersey's position as a Maritime State and that industry's impact on our economy.

New Jersey is truly a Maritime State. The waterways which are contiguous to our State transport a quarter billion tons of waterborne commerce annually; they include the arteries for the shipping of the majority of the foreign commerce which our nation enjoys; and they provide a billion dollars in custom revenues annually. Our Atlantic Coast communities, with our unparalleled beach fronts, support a ten billion dollar recreation industry and our State is a major fishing center of the Atlantic Coast.

We endorse that which is presently included in the President's budget, however it is important that I address those projects, which if not sufficiently authorized and funded by Congress, will have an adverse effect on the economic well being of our state. These are the items on which we solicit specific Congressional assistance.

Summary of Recommendations

The New Jersey Maritime Advisory Council wishes to recommend an additional appropriation of $15,535,000 in Federal funds in FY 86 allocated among eight projects. The Federal budget allotment for these projects is $26,157,000. The following statement shows project recommendations.

Project	Federal Budget	Local Interests
Survey Funds		
New Jersey Intracoastal Waterways	None	$ 100,000
New Construction Funds		
Cape May Inlet to Lower Township	None	$4,000,000
Delaware River at Camden, New Jersey	None	$4,415,000
Kill Van Kull and Newark Bay Deepening	None	$ 100,000
NY Harbor Collection and Removal of Drift	$3,700,000	$5,000,000
Operation and Maintenance Funds		
Cold Spring Inlet, N.J.	None	$ 120,000
Delaware River, Phila. to the Sea	$19,592,000	$23,592.000
New Jersey Intracoastal Waterways	$2,865,000	$4,365,000

The remainder of this statement will elaborate on these projects.

BARNEGAT INLET, N.J.

It has been accepted on the basis of Corps of Engineers studies that a design deficiency now exists in the Barnegat jetties as constructed by the Corps of Engineers in 1938. The design deficiency has created the most hazardous Federally maintained inlet on the Atlantic Coast which results in loss of life every year.

The Inlet has great commercial and recreational use.

The Corps of Engineers, in applying traditional policies and principles, recommended cost sharing on a 65% Federal and 35% State of New Jersey basis. The State of New Jersey accepted this despite a conviction that a Federal design deficiency should be corrected at full Federal expense. Based on an understanding of 65% Federal and 35% Local costs, $4,000,000 of construction funds were voted by Congress for FY 85. The administration has withheld the use of these funds and has included $1,000,000 of construction funds in the FY 86 budget with the understanding that construction will only be initiated if the State of New Jersey consents to 70% local contribution.

We urge that Congress instruct that the $4,000,000 of FY 85 funds and the $1,000,000.00 of FY 86 recommended funds be utilized forthwith to undertake construction on the cost sharing basis of 65% Federal and 35% Local funds on a continuous basis for the project as has been previously agreed.

CAPE MAY INLET TO LOWER TOWNSHIP

The shore line in Cape May and below Cape May has suffered severe erosion since the construction of the Cape May Inlet jetties in 1911. This has been to the detriment of the recreation industry and causes repetitive storm related damages.

The Corps has completed the General Design Memorandum and has done advance engineering and has recommended a $9,600,000 initial project to restore the damage caused by the Cape May navigation jetties. They have recommended that this work be done under traditional policies and under the authority of Section 111 of the River and Harbor Act of 1968. We ask that this project which provides for groins and beach fill be authorized and funded with $4,000,000 of Construction General Funds to permit the work to be undertaken.

COLD SPRING INLET

Cold Spring Inlet provides the access to the Atlantic Ocean for the fishing fleet which has made Cape May the second largest fishing port on the Atlantic Seaboard. The Inlet also is the entrance for Coast Guard craft which serve the Coast Guard Base and Training Center at Cape May. The Inlet is also important as a feature to support the recreation industry in Cape May.

The Inlet is authorized and justified as a 20' project. Current controlling depths are under 13' and no maintenance FY 86 funds are provided even though a further deterioration of controlling depths can be forecast for this year. We urge that $120,000 of O&M funds be provided for maintenance dredging for FY 86.

DELAWARE RIVER AT CAMDEN, N.J.

This project was adopted in 1918 and the remaining work is the completion of a 37' depth between the main ship channel and the Beckett Street Terminal of the South Jersey Port Corporation. This port facility has profited from a $40,000,000 expansion program which has taken place in recent years. This expansion was completed and a 40' berthing area was provided under the expectation that the 37' project would be completed. Utilization of the expected 37' depth and high tide waters for ship movements justified the creation of a 40' berthing area. The benefit cost ratio for this 37' approach depth is 4.5 to 1.

Preconstruction planning has been completed and engineering and design has been completed by the local district office to the point where the work can be bid as soon as construction money is available. The estimated cost of completing this work is $4,415,000.

The work should be done as soon as possible for a number of reasons:

1. Camden, New Jersey is one of the most depressed areas in this nation. South Jersey Port Terminal and other port facilities in the area are one of the principal sources of employment for Camden.

2. The full realization of the benefits from a $40,000,000 semi-public investment required the additional depth. It seems counterproductive to defer construction of a project in a severely depressed employment area.

DELAWARE RIVER COMPREHENSIVE NAVIGATION STUDY, N.J., PA, DEL

We concur that $950,000 is needed for this study. Our major concern is that this funding be sustained with a view towards bringing to a conclusion the intended study of the most appropriate dimensions for the Salem River. Such a study is necessary to support the

Salem Port Authority, who, since 1983, and with local funds and a modest amount of matching funds, have brought a new port facility in South Jersey into being. This facility is now moving farm products out of Southern New Jersey to other locations. Not withstanding the handicap of a 16' approach channel they have moved farm products to overseas markets by barge movement to the Delaware River for loading aboard ocean going vessels. This is a boom for New Jersey farmers and a contribution to the U.S. need for more exports. The resourcefulness of the City of Salem should be recognized with a prompt completion of a dimension study for Salem River.

DELAWARE RIVER PHILADELPHIA TO THE SEA, PA, N.J.

The budget figure as constituted only contains sufficient funds to continue this project in its present inadequate state. The channel is authorized as a 40' project, but controlling depths are significantly less on a regular basis.

The Delaware River supports the major petroleum refinery center on the eastern seaboard as well as port terminals in Philadelphia, Camden, Wilmington and the U.S. Steel Fairless Works. This project is important to this region which includes New Jersey. Instead of 40', a controlling depth of 38' or less predominates throughout the year. One foot of depth on deep draft vessels has an economic loss to operators between $30,000 to $100,000 per vessel trip. It is essential that the full 40' depth prevail at all times and an additional $2,000,000 of O&M funds are required to achieve this in order to perform a resonable amount of advance maintenance for the channel.

In addition, another $2,000,000 of O&M funds is required to provide a reasonable state of maintenance for the Marcus Hook Anchorage, the only 40' deep anchorage in the entire 100 miles of the Delaware River Channel. This anchorage is necessary for reasons of ship safety.

KILL VAN KULL AND NEWARK BAY CHANNELS, N.Y. & N.J.

On July 14, 1972, a critically needed study of a deepening and selective widening of the Kill Van Kull and Newark Bay Channels was authorized by a resolution of the House Committee on Public Works. This Federal waterway serves the general cargo-container terminals at Elizabeth and Port Newark on Newark Bay, as well as oil terminals on the Kill Van Kull. The 2,323 acre Port Newark and Elizabeth Seaport Complex, a $475,000,000 development, has an annual payroll in excess of $132,100,000.

The cargo terminals which this project will service are without parallel in this nation. The project has the impressive benefit cost ratio of nearly 7 to 1. Initiation of construction must not be delayed further. It is our understanding that the $600,000 in the President's budget will complete advance engineering and design for this project and the addition of $100,000 in construction funds will permit the start of construction late in FY 86. Such an addition will complement the Port Authority of New York and New Jersey's $158,000,000 Port Development Plan for terminal expansion and modernization to efficiently accommodate the growing fleets of larger vessels. We urge the addition of $100,000 to permit this long awaited project to be undertaken. This is an extremely modest request, yet one that will cause a major step forward for this project which both the Administration and proposed port legislation before Congress have recommended for authorization of construction in FY 85.

N.J. INTRACOASTAL WATERWAY (NJICW), N.J.

The NJICW has only been constructed to a 6' depth and is the most restrictive link in the Inland Waterway between New England and Florida. Although this project has been authorized for a 12' depth since 1946, it remains unconstructed due to unresolved and difficult wetlands and bridge problems, primarily in the Atlantic City and Longport, New Jersey areas.

Nevertheless, this should not allow the entire NJICW to continue to suffer inadequate dimensions throughout its 100 mile length. The numerous inlets to and from the Atlantic Ocean to the NJICW suggests that improvements in depth and width are warranted. Improved channel dimensions would open interior areas to traffic that cannot presently be accommodated. An appropriation in the amount of $100,000 is required to initiate such a study and it is requested that the Congress approve this amount and authorize such a study.

In addition, we note that $2,865,000 of O&M funds has been recommended for this project and we have been informed that this will provide for the required maintenance dredging and rehabilitation of the bulkhead along the Point Pleasant Canal. However, serious erosion continues along its banks to the detriment of the Canal, which also results in the loss of precious and irreplacable real estate. The proposed budget only includes $300,000 for bank stabilization whereas an additional $1,500,000 is required to complete all the necessary work. The process of erosion is inexorable and deferment of work, which ultimately will have to be done will only be at the expense of loss of more valuable land and increase maintenance costs.

NEW YORK HARBOR AND ADJACENT CHANNELS, N.J. & N.Y.

We understand the proposed funding is sufficient to complete the Claremont Channel study during FY 86 and continue the Port Jersey Channel study. However, we are disappointed that the Port Jersey Channel study portion of the New York Harbor and Adjacent Channels project will not be completed in FY 86.

The Port Jersey Channel is important for early completion in that it serves 10 container lines at a privately financed 100 acre facility, a facility built at a cost of $50,000,000 with on-site employment in excess of 600 people. During 1984, this terminal handled 363 vessel calls and more than 12% of the total container traffic in the New York/New Jersey Port District. Additional reason for expediting the Port Jersey Channel study include the consideration by the Port Authority to use the adjacent 105 acre parcel for expanded marine cargo handling facilities.

NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT PROJECT, N.Y. & N.J.

This project profits from the coordinated efforts and funding from local communities, New York, New Jersey and the Federal Government. Work to date has been most satisfactory and has rejuvenated harbor areas. Our new Liberty Park in New Jersey is one of the significant benefits which has resulted from this work. However, much remains to be accomplished and we consider the $3,700,000 recommended in the Federal budget as insufficient to achieve the desired progress and urge an increase of $1,300,000 to $5,000,000. This added funding will permit extending the project to Bayonne, Brooklyn and Shooters Island reaches, for which the States of New York and New Jersey, as the agencies of local cooperation, have the required one third cost sharing available for expenditure.

# # #

We consider our overall request consistent with congressional efforts to reduce unemployment and stimulate economic growth. Delays in these waterway projects can cause higher port costs, loss of employment and terminal construction and slow future economic recovery. The area in which the above study projects are located is urgently in need of economic stimulation. We hope you will favorably consider our recommendations.

This Department appreciates the opportunity to present our views and recommendations on these matters to the distinguished members of the committee.

STATEMENT OF THE PENJERDEL COUNCIL

INTRODUCTION AND SUMMARY

FY-86 Funding of Navigation Projects of Interest to the Ports of Philadelphia

The PENJERDEL Council is a regional association of commerce, industry, and the professions with membership throughout the tri-state, Delaware Valley region.

The Council is concerned with the economic development of the PENJERDEL region which includes eleven counties in segments of three states in Pennsylvania, New Jersey, and Delaware. A major concern of our members is the economic development of the ports of Philadelphia.

Since time is of the essence, I offer for the record the full testimony embodied in this statement, which provides background information to support our conclusions and recommendations.

40' CHANNEL

Our primary concern is that our region has been suffering with inadequate maintenance of the authorized 40' channel.

There are billions of dollars along the three state waterfront which rely heavily on the mandated 40' channel. We urge that the Corps of Engineers be directed to do the proper level of channel maintenance and the funds required therefore be provided.

ANCHORAGES

We are further concerned that the President's Budget contains no funds for adequate maintenance of the Delaware River Anchorages.

CAMDEN WATERFRONT

The Camden Waterfront is an authorized project which has not yet been completed. We urge that Congress direct the U.S. Army Corps of Engineers to complete the project to a 37' depth so that the full authorized depth will exist at the Camden Waterway, Delaware River.

The 37' depth for the Camden Waterway will be a major step in providing employment to this economically depressed area.

On behalf of the PENJERDEL Council, we very much appreciate the opportunity to be heard, and present our views on these matters to the distinguished members of this committee. Thank you.

DELAWARE RIVER - PHILADELPHIA TO THE SEA

The budget figure as constituted only contains sufficient funds to continue this project in its present, inadequate state. Although the channel is authorized as a 40' project, in practice the controlling depth of the channel throughout the year is closer to 38'.

Each foot of restricted draft can mean as much as $30,000 per trip to vessels using the Delaware River Channel. It is vital that a 40' channel depth be maintained at all times.

We therefore urge that an additional $2,000,000 of O & M be added in order to perform a reasonable amount of advance maintenance for the channel.

In addition to inadequate channel depths, the authorized anchorages contiguous to this channel are also inadequately maintained. There is only one 40' deep anchorage in the entire 120 miles of the Delaware River Channel. This is the Marcus Hook Anchorage, and it is a vital anchorage for reasons of

convenience and ship safety. This anchorage has depths which have deteriorated to 21' and controlling depths of 36' usually prevail over most of its width. We urge that another $2,000,000 of O & M funds be authorized for the adequate maintenance of this anchorage.

CAMDEN WATERFRONT

This project was adopted in 1910 and modified in 1930 and 1945. The remaining work for this project is the completion of a 37' depth between the main ship channel and the Beckett Street Terminal of the South Jersey Port Corporation. The South Jersey Port Corporation has recently undertaken a $40,000,000 expansion program. A 40' berthing area was provided under the expectation that the 37' project would be completed. Utilization of the expected 37' depth for ship movements justified the creation of a 40' berthing area.

The U.S. Army Corps of Engineers, Philadelphia District Office, has completed preconstruction engineering and design. A benefit cost ratio for this 37' approach depth is 4.5 to 1. Bids can be made for this project as soon as construcion money can be made avaiable. The estimated cost to complete the work is $4,415,000.

We urge that these funds be allocated for the following reasons:

1) Camden, New Jersey is one of the most economically depressed areas in the U.S. Employment opportunities are almost non-existent with the exception of the port facilities. The state of New Jersey has invested heavily in the Beckett Street Terminal and there is great potential for the creation of jobs for the city of Camden. The deeper waterway will give further support for the jobs needed in the area.

2) The full benefit of the investment in the South Jersey Port ($40,000,000) requires the additional depth. It would be counterproductive to delay construction of a project in a area of high unemployment when the project study indicates a 4.5 to 1 benefit cost ratio.

PORT OF WILMINGTON

The Port of Wilmington is a substantial economic asset to the City of Wilmington, State of Delaware, and the PENJERDEL region. The activity of the Port provides an estimated 1,860 jobs and accounts for upward of $105 million in revenues for the State of Delaware.

The Port represents an investment of over $50 million in both public and private funds with an additional $20 million planned for future expansion. Recently a $5 million Bulk Transfer facility for frozen citrus concentrate and a $3 million temperature contolled fruit facility began operation.

The Port of Wilmington handles an estimated 2.7 million tons of water-borne commerce annually and its gross revenues top $10 million.

The current level of dredging of Wilmington Harbor and the Corps budget for this activity, is in our view, the minimum essential necessary to accommodate existing trade and that of the future.

DISPOSAL AREAS

Crucial to the continued maintenance of the Delaware River and its tributaries are the requirements for disposal areas for dredged material. In this regard, the PENJERDEL Council urges Congress to direct the Corps of Engineers to complete the disposal area study.

SCHUYLKILL RIVER

The PENJERDEL Council greatly appreciates the completion of the Schuykill River study for proposed deepening from 33 to 37 feet.

The study prepared by the U.S. Corps of Engineers is currently waiting approval by the Board of Engineers for Rivers and Harbors. In optimistic anticipation that the study will be approved, we urge Congress to authorize the necessary funds for this project.

Exporting of grain has been an increasing business in the last several years which is a benefit to our farmers, our foreign balance of trade, and to our water-borne commerce. The annual export of 3 million tons of grains to foreign ports is a significant asset to the PENJERDEL region. This trade is limited by the authorized 33' depth. Our competitors enjoy depths of 40' or more. This limitation can have a penalty of as much as $100,000 per foot of draft. The Corps of Engineers has determined that the benefit cost ratio of a 40' channel in the Schuylkill River is 4.7 to 1. The costs of deepening the channel to 40' are considerably low when considering the economic assits it would bring to the PENJERDEL region and the nation.

STATEMENT OF DINAMO/OVIA

DINAMO/OVIA, the Association for the Development of Interstate Navagibility in America's Ohio Valley, respectfully requests appropriations for inland navigation projects on the Ohio River navigation system as follows:

Gallipolis Locks and Dam, (OH/WVA), $4.5 million for final design and real estate acquisition

Locks #7 and #8, (PA/WVA), Monongahela River, $1.3 million for Continued Planning and Engineering (CP & E)

Locks #52 and #53, (KY/IL), Ohio River, $1.2 million for Continued Planning and Engineering (CP & E)

Ohio River Main Stem Study, (PA), leading to reolacement of Emsworth, Dashields and Montgomery Locks, $2.575 million for Planning

Kanawha River Navigation Survey, (WVA), concerning Winfield, Marmet and London Locks and Dams, $400,000 for Planning

Cumberland-Tennessee River, (KY/TN), $800,000 for Planning

Monongahela-Youghiogheny River Basin, (PA/MD/WVA), concerning Locks and Dams 2, 3, and 4, $750,000 for Planning

Good afternoon. My name is Barry Palmer. I am Executive Director of DINAMO/OVIA--The Association for the Development of Interstate Navigability in America's Ohio Valley. We are a broad coalition of business, labor, and state governments from throughout the Ohio Valley working toward modernization of our region's lock and dam facilities. These projects are crucial to sustaining economic viability in a region of our nation that has yet to recover from the ravages of the recent recession. I appear on behalf of DINAMO/OVIA's Executive Committee and Board of Directors to present our organization's appropriation requests for fiscal year 1986 for inland navigation projects on the Ohio River navigation system.

In presenting our request, please understand that DINAMO/OVIA is keenly aware of the urgent problem our nation faces regarding budget deficits. Ever increasing government borrowing is having adverse effects on interest rates and the value of the dollar in the international monetary markets with subsequent impact on our national balance of payments and the export market. A solution must be found and the Congress is to be commended for its efforts to resolve this difficult question.

It is the Congress' responsibility, then, to see that all available funds be utilized in the most efficient and cost-effective manner. All appropriations for the coming fiscal year, and all fiscal years thereafter, should be measured on, among other criteria, their impact on economic development, cost effectiveness, and the ability to maintain current jobs and produce new ones.

One useful measure of the importance of these lock and dam facilities in the Ohio Valley is the growth of traffic on the Ohio River navigation system over the past thirty years and an understanding what waterborne commerce means in terms of the jobs associated with that commerce.

In 1951, commercial traffic on the Ohio River and tributaries was 12.6 billion ton miles, and, because of development of the inland navigation infrastructure in the Ohio Valley throughout the 1950's and 1960's, reached 22.9 billion ton miles in 1960, 38.7 billion ton miles in 1970, and 48.3 billion ton miles in 1980. Today there are more than 510,000 jobs associated with waterborne commerce in the Ohio Valley States of Illinois, Indiana, Kentucky, Ohio, West Virginia, and Pennsylvania from the movement of commodities that in 1980 had a value estimated in excess of $43 billion.

Clearly the investment in facilities for which we are asking appropriations will result in economic contributions to the nation's economy that will be paying dividends for 50 years or more.

The most important modernization project in the Ohio Valley is the Gallipolis Locks and Dam project on the Ohio River's West Virginia/Ohio border. The Board of Engineers for Rivers and Harbors recommended replacement of the two aging and obsolete locks and rehabilitation of the existing dam in September 1981. The Congress, largely as a result of the interest of this Committee, has nurtured this project along over the past several years, appropriating funds for continued planning and engineering, advanced design and construction specifications. Last year the Congress passed a limited authorization measure and funding of advanced work for this project, and the President signed that legislation.

Now we are respectfully requesting $4.5 million for final design and real estate acquisition at Gallipolis.

We note with interest that the Corps of Engineers has provided testimony requesting $4.5 million for FY 1986 for this project, subject to the cost-sharing provisions of the Administration's water resources legislation. It is worrisome to note that funding for this project may be delayed due to this tie-in with the unresolved question of cost sharing. The annual benefits in transportation savings from modernization of the Gallipolis locks are $173 million. Delay of the final design and real estate acquisition in FY 1986 will set the entire construction project back six months to a year, meaning that millions of dollars in transportation savings benefits will be lost forever. It would appear that an appropriation of $4.5 million for final design and real estate acquisition would be returned by only 10 days of transportation savings benefits. Additionally, it would appear that the Nation's interests for an efficient water transportation system will not be met by delays in Congressional action with respect to Gallipolis.

DINAMO/OVIA respectfully requests and supports the appropriation of funds for other projects already identified in the President's FY 1986 Budget as follows:

. Monongahela River Locks #7 and #8	$1,300,000	Continued Planning & Engineering (CP&E)
. Ohio River Main Stem Study, leading to replacement of Emsworth, Dashields, and Montgomery Locks, Ohio River	$2,575,000	Planning
. Kanawha River Navigation Survey, concerning Winfield, Marmet and London Locks and Dams	$ 400,000	Planning

. Cumberland-Tennessee Rivers $ 800,000 Planning

There are two other areas of the FY 1986 Budget for the Corps of Engineer Civil Works Program where DINAMO/OVIA requests your assistance.

First, we are requesting $1.2 million for Continued Planning and Engineering (CP & E) at Locks #52 and #53 on the Ohio River. By the end of April 1985, the Corps of Engineers in Louisville will release its Feasibility Report regarding replacement of Locks #52 and #53 on the Ohio River. Both structures were completed in 1929, originally consisting of a single 600-foot lock and navigable dam. In 1969, a 1,200-foot temporary lock was added at Lock and Dam #52 to meet an immediate need for relief of waterway congestion. In 1980, a similar 1,200-foot lock was completed at Lock #53. It should be noted that the 1,200-foot lock chambers were constructed for temporary service and have a design life of only 15 years. The temporary 1,200-foot lock chamber at Lock #52 passed its design life in 1984.

This situation is further exacerbated by the fact that lockage delays and projected waterway traffic demands exceed lock capacity. Hence, these navigation facilities, which are over 50 years old or have been constructed temporarily to meet immediate needs, need to be put on a fast-track for modernization. Other problems at these facilities include manual operation of wicket dams for pool stability and pass operation.

Secondly, we also request additional funds totalling $750,000 for the Monongahela-Youghiogheny River Basin PA, MD and WVA. We understand that the President's Budget includes $250,000 for this study. However, an approved capability of $750,000 exists and will permit advancing the completion of the overall study by six months. Approval of this level of funding would advance economic and environmental elements of the study of improvements to Monongahela River Locks and Dams 2, 3, and 4.

Locks and Dams 2, 3, and 4 on the Monongahela River are vital links in the transportation of Monongahela Basin coal and associated industrial commodities. In 1984 these locks handled 17.5, 18.8 and 16.4 million tons respectively. These tonnages were 37%, 18% and 17% higher than in 1983. Major problems at these facilities relate to their condition and lock size. These structures are old and deteriorating with an average age of 54 years. Preliminary surveys and experience with other aging navigation facilities suggest that increased maintenance or major rehabilitation expenditures will become more likely in the future.

Lock and Dam 2 has a 110-foot by 720-foot main lock chamber and Locks and Dams 3 and 4 have a 56-foot by 720-foot main chamber. Each of these locks also has a 56-foot by 360-foot auxiliary lock chamber. It is anticipated that increased traffic demands will cause congestion at these locks by the year 2010. Lock size currently affects navigation efficiency at Locks and Dam 3 and 4 where the 56-foot lock width constrains the use of larger and more economical barges and tows. With the replacement of Locks and Dams 7 and 8, Locks 3 and 4 will be the only projects on the Monongahela River that do not provide a lock width of at least 84 feet. Alternatives being considered include rehabilitation of the existing structures and the construction of new 84-foot by 720-foot or 110-foot by 720-foot locks at existing sites. The study is scheduled for completion in FY 1989.

In closing, I would like to take this opportunity to applaud this Committee for its bold leadership during the last session of Congress and its efforts with the Public Works Committee to break the logjam on user charges and cost-sharing, which gives us hope for the future. We look forward to a similar spirit of cooperation this year. Therefore, it is DINAMO/OVIA's sincere hope that this Committee will recommend funds for these projects which will result in the early authorization and funding of modernization projects urgently needed in the Ohio Valley.

STATEMENT OF NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

INTRODUCTION

Mr. Chairman, and members of the subcommittee, my name is Henry G. Williams. I am Commissioner of the New York State Department of Environmental Conservation. My department is New York State's Water Resources Agency. I appreciate this opportunity to present New York's testimony on the Civil Works program of the Corps of Engineers for federal fiscal year 1986.

For many years, the Civil Works program has provided great benefits to all the citizens of New York through projects concerning water supply, distribution systems, flood and erosion control, navigation, recreation and the safeguarding of environmental resources.

Today, I want to highlight two PL 89-298 programs which have been very important in helping us in our efforts to provide adequate water supply and delivery systems for our citizens.

First, the Section 214 program, has enabled us to develop fundamental information about the condition of our water supply infrastructure in large and small communities throughout the state. We are requesting $1 million for FF-1986 under the Section 214 program. Second, the Northeast Water Supply Study called (NEWS), has explored water supply needs of the New York metropolitan area, the lower hudson basin, and adjacent watersheds. We need $1 million in federal funds in FFY 86 to advance the recommendations of the NEWS study and the Corps of Engineers action plan related to it.

In addition, we have a list of specific projects or studies which are very important to New York State, 8 of these are included in the President's proposed budget at levels which are insufficient to do the job properly, even worse, no funds at all have been budgeted for the other 11 projects. I respectfully and strongly request an additional 12 million to adequately address the modest program of civil works which these 19 projects represent.

PL 89-298 is landmark legislation because it addresses the water supply needs of our great metropolitan areas. It also recognizes a proper role for the federal government in helping to solve the nation's water supply problems. PL 89-298 authorized both the Sec. 214 and the NEWS study.

We must note, however, that the NEWS study which was completed in 1977, proposed further evaluations that would focus on issues relating to new-source developments. These issues include reassessment of the water supply deficit in view of recent drought experiences and changed population and growth projections, reevaluation of a number of alternative solutions to environmental problems, and preliminary work related to the Third City Water Tunnel.

For the fourth time in the past five years the New York City water supply system is experiencing drought conditions. The city announced a drought watch on February 25, and a drought warning proclamation is imminent. Yet eight years have passed and the additional evaluations called for in the NEWS study have not been initiated. Funding is needed now for these additional studies, and for review by the Corps of Engineers drawings for city water tunnel #3. These efforts are estimated to cost $15 million, of which we are requesting $1,000,000 for FY 1986.

Last year we discussed the corps draft report that was prepared addressing the concerns of the conference committee on the FY 1983 supplemental appropriations bill about the water supply problems of the greater New York area. This brief report, entitled "New York Metropolitan Area Water Supply Study, January 1984" provides excellent insight into the scope of the water supply issues we face. We commend it to your attention.

As we all know, severe weather frequently produces flooding, loss of life and significant property damage throughout the country. Flood damage occurs in some portion of New York State every year, particularly in the nearly 1500 communities which are flood prone. Flood damage in New York State this past month, for example, will amount to millions of dollars and serve to emphasize the serious problems facing many communities where federal assistance is being sought. The proposed civil works funding assistance falls far short of the amount necessary to support planning and construction of local flood protection projects. Our requests for funding for high priority projects are described individually in the material I am submitting with my testimony.

Thank you.

ATTACHMENT

Flood Control

Damaging floods occur in some portion of New York virtually every year. During 1984, two serious floods resulted in presidential disaster declarations. In 1983, the last year for which complete data is available, property damage due to flooding in New York substantially exceeded $200 million. It is estimated that 1.5 million people live in the nearly 1500 flood-prone communities in the State. New York STate vigorously promotes participation in the National Flood Insurance Program. Even so, only a small fraction of flood losses are covered by insurance. The proposed civil works funding levels fall far short of the needs in New York.

New York State supports funding of all projects as they appear in the budget except for the St. Lawrence Seaway Additional Locks Study and where funding levels are inadequate. Requests for increased levels of funding are discussed in the following paragraphs and in the attached table.

Ellicott Creek

Major flooding along Ellicott Creek in February of this year resulted in damages in excess of $3 million in the Town of Amherst. These damages would have been prevented if the Ellicott Creek Flood Protection Project was completed and functioning. The state has committed, to date, in excess of $2 million for lands and relocations and has completed construction of a major segment of the project in conjunction with highway construction. The state strongly supports funding in the amount of $3.5 million for construction of the first segment of this project. Completion of the first segment is urgently needed to allow the already constructed North Division Channel to function.

The Ellicott Creek project is New York's highest flood control priority for initiation of construction.

Ardsley

The civil works budget contains funding for a construction start of the Ardsley Flood Protection Project in the amount of $480,000 and shows a non-Federal contribution of $300,000. In order for the project funds to be included in the budget, the Village of Ardsley succumbed to coercive pressure by the administration to voluntarily contribute 35% of project construction costs. This contribution is one which the Village can ill afford and will place a serious burden on its fiscal resources.

It is the contention of the State of New York that the matter of cost sharing is one which should be determined by the Congress. Therefore, we urge that Congress appropriate $780,000 for initiation of construction of the Ardsley project under traditional cost sharing and that the appropriations bill contain language making clear that tradition cost sharing is to apply to this project.

Fire Island Inlet to Montauk Point Reformulation Study

During 1978 the President's Council on Environmental Quality required the Corps of Engineers to reformulate this hurricane protection project. After five years of effort and the expenditure of $4.7 million, this study is incomplete; and no funds have been included for study continuation in the FY 86 budget. Without completion of the study, there can be no basis for future planning and project development by Federal or non-Federal interests. Without bringing the study to a reasonable level of completion, the majority of the $4.7 million already expended will be largely wasted. New York strongly requests an appropriation of $1.2 million to bring the study to a reasonable level of completion and that Congress direct the Chief of Engineers to complete the study.

Dansville

Again this year, no funds are included in the budget for construction of the Dansville Flood Protection Project because neither the Village of Dansville nor the State of New York would yield to coercive pressures by the administration to contribute to the construction costs above the level mandated by Congress. An appropriation of $500,000 is urged to initiate construction of this project.

Westchester County Streams - Mamaroneck and Sheldrake Rivers

An appropriation of $800,000 rather than the budget amount of $600,000 is urgently needed to advance the completion date of the design document. This project in the Village and Town of Mamaroneck and the Town of Sheldrake is the most critically needed project in Westchester County.

Westchester County Streams - Byram River

An appropriation of $300,000 is requested for continued planning and engineering for the highly vulnerable communities of Port Chester, NY and Greenwich, Connecticut.

South Ellenville

An appropriation of $100,000 is requested for surveys and planning of a needed flood control project in the Village of Ellenville.

Great Sodus Bay

The budget contains a recommended appropriation of $26,000 for maintenance at Great Sodus Bay. Water samples collected, analyzed and reported on in 1983 show that water just beyond the mouth of the bay has the highest chloroform concentration observed from a series of samples taken in Lake Ontario and the second highest methylene chloride concentration.

These findings suggest that the fine-grained high organic content sediments from relatively undisturbed sites within the bay may be contaminated with pesticides and base-neutral chemicals. Before any dredging takes place in these areas, the sediments should be sampled to determine whether or not they are contaminated.

CIVIL WORKS PROGRAM
REQUESTED ADDITIONAL FUNDS FOR FISCAL YEAR 1985

PROJECT	TYPE	STAGE	FUNDS BUDGETED ($1000's)	NEEDED ($1000's)	ADD'L FUNDS REQ. BY NYS ($1000's)
FLOOD CONTROL					
Ellicott Creek	FC	Construction	1,000	3,500	2,500
Ardsley	FC	Construction	480	780	300
Dansville	FC	Construction	0	500	500
Westchester City Streams - Mamaroneck & Sheldrake	FC	Surveys	600	800	200
Westchester City Streams - Byram River	FC	Surveys	0	300	300
South Ellenville	FC	Surveys	0	1,500	1,500
Hoosic River	FC	Surveys	0	230	230
Passaic River Review Study	FC	Surveys	1,700	2,270	570
Caledonia	FDP	Surveys	0	50	50
Mosse and Black Rivers	FDP	Surveys	0	340	340
Tonawanda Creek	FDP	Surveys	0	300	300
Fire Island to Montauk Pt. Reformulation	FC	Special	0	1,500	1,500
			3,780	12,070	8,290
NAVIGATION					
St. Lawrence Seaway Additonal Locks	N	Surveys	375	0	- 375
Hudson River	N	O&M	3,143	4,443	1,300
Jones Inlet	N	O&M	0	1,000	1,000
Mamaroneck Harbor	N	O&M	0	500	500
Plattsburgh Harbor	N	O&M	0	708	708
Oak Orchard Harbor	N	O&M	26	306	280
Oloctt Harbor	N	O&M	10	285	275
Wilson Harbor	N	O&M	10	289	279
			3,564	7,531	3,967

FLORIDA WATER RESOURCE PROJECTS

STATEMENT OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Mr. Chairman and members of the Subcommittee, I am Victoria Tschinkel, Secretary of the Florida Department of Environmental Regulation. We are very pleased to have this opportunity to discuss with you the State of Florida's Fiscal Year 1986 Program for Water Resources Development. Governor Graham strongly supports this unified program, and it has been thoroughly reviewed by the State Resource Management Clearinghouse. Our program is summarized in a booklet that provides cost data, project descriptions, project justifications, and location maps for each of the projects in the program. I have submitted copies of this booklet and my prepared statement for the record. My statement here today can only highlight some components of our program.

Included in our Fiscal Year 1986 program are 8 flood damage prevention, 15 navigation and 14 beach erosion control projects (either construction or general investigation studies). Also included are 5 studies in the area of environmental restoration and enhancement. The total request for Florida's FY 1986 Public Works Program is $80,454,000.

FLOOD DAMAGE PREVENTION

In the category of flood damage prevention, the Central and Southern Florida Flood Control Project is, by far, our largest. This project includes the State's largest urban area, where water resources must be managed to keep pace with continued population growth and the needs of Florida's fragile natural environment. Full funding at the level indicated is necessary to meet program needs in one of the nation's largest multiple-purpose water management system.

Our project request also includes funding to initiate the construction of a project for the Upper St. Johns River Basin. Over the last nine years, the Army Corps of Engineers and the St. Johns River Water Management District have developed a range of alternatives to deal with the complex problems of this great Florida river. The St. Johns has experienced water quality degradation, massive fishkills, and the loss of many thousands of acres of wetlands and water quality degradation. We have stressed the importance of non-structural solutions to water management problems. The recommended alternative is fully supported by the state and is now ready for appropriations for design and construction. The overall project cost is estimated to be about $107 million, $80 million of which is to be provided by the local sponsor, (primarily for necessary lands). This is far more than is usually paid by non-federal interests.

Several water management studies are also included in Florida's request. The St. Marys River and the Suwannee River Basin Studies will allow continuation of efforts to preserve and protect these mostly-undeveloped interstate rivers and provide state, regional, and local levels of government the information they must have to wisely manage the floodplains. Both studies are strongly supported by the State of Georgia.

The coastal areas of Northwest Florida are experiencing very rapid population growth that has caused a serious groundwater depletion problem in some areas. A water management study is needed to meet these increasing demands for water and to protect fragile aquifers.

NAVIGATION

Florida is using a great deal of its own resources to enhance port commerce. We are now evaluating the spoil disposal problems faced by Florida's fourteen deepwater ports and are seeking long-term solutions to these problems. We have provided $12 million to purchase and improve upland spoil disposal sites. We have also eliminated a backlog we once had in processing maintenance dredging permits and can now issue 25 year maintenance dredging permits.

The nine-year project to deepen Tampa Harbor to 43 feet would be completed with FY 1986 funds. With over 42 million tons of cargo moving through the port

annually, Tampa is Florida's largest port and handles more phosphate shipping than any other harbor in the world. Navigation funding would also allow needed deepening at Port Manatee and Port Canaveral and preconstruction planning for Gulf Coast Passes and Ft. Pierce Harbor.

We strongly support funds to implement the Miami River Cleanup Study. Polluted sediments in the navigation channel are causing serious environmental problems in this major urban river, and Biscayne Bay as well.

BEACH RESTORATION

Florida has more miles of coastline than any other state except Alaska; many of our beaches are seriously eroding. The opportunity to visit Florida beaches is a prime asset to our tourism industry. Natural erosion has been severely aggravated by existing development and, ironically, by previous attempts to alter these erosional and depositional processes. Fortunately, Florida's program to establish standards and limitations for coastal construction is achieving beneficial results. However, the damage that has already been done must be corrected in order to provide protection from storms and to restore adequate recreational beaches for the 39 million people who visit Florida each year.

Federal restoration funds would complement several state funded restoration and preservation programs. The State of Florida has expended over $30 million since 1965 on beach restoration projects. Additionally, in 1981, the state initiated a $200 million "Save Our Coast" land acquisition project to preserve important coastal areas. We have already expended $87 million. We will also continue to share with the federal government in the cost of beach restoration. Independently, we are conducting our own evaluation of the most cost-effective techniques of beach nourishment.

Florida's request for FY 1986 would provide funds for several beach restoration projects. Of special importance is our proposal for a study of coastal processes along all of Florida's coastline.

ENVIRONMENTAL RESTORATION AND ENHANCEMENT

One of our major goals is to broaden the scope of Federal participation in water resources development projects to include the restoration and enhancement of water resources. These projects are particularly important to Florida. They provide the opportunity to correct previous practices that threaten water and related resources in a state that depends directly on maintaining high environmental quality. We are still a very fast growing state and increasing demands are being placed on the very resources that bring many of the new residents and tourists to Florida.

Governor Graham's plan to "Save Our Everglades" is a major state commitment to preserve and restore the Kissimmee River-Okeechobee-Everglades ecosystem. We in Florida are making very large financial contributions to this effort. For example, we are working with the federal government on the acquisition of 160,000 acres associated with the completion of I-75 in south Florida. We have already expended $50 million on the purchase of 132,000 acres of environmentally-sensitive land in south Florida. We plan to spend many millions more over the next few years to purchase an additional 200,000 acres, including 33,000 acres in the floodplain of the Kissimmee River. All this is in addition to the $40 million we contributed a decade ago to the purchase of the Big Cypress Federal Preserve in south Florida.

We appreciate the cooperation we have received from the South Florida Water Management District, the Corps of Engineers, and Congress on several components of the Governor's plan. Even more intergovernmental cooperation will be needed in a joint local-state-national program to preserve this unique ecosystem for all time. Important parts of this program include: altered water discharge schedules to Everglades National Park, land acquisition in the park's buffer areas, re-establishment of the N.E. Shark River Slough Flow-way, and flood protection for East Everglades homeowners.

The State and the South Florida Water Management District are now proceeding with "Phase I" of the Kissimmee River Demonstration Restoration Project which should be completed in early 1986. Monitoring will be conducted over the next two years on ways to establish a more natural water regime in this segment of the channelized Kissimmee River. At that time, we may request substantial federal financial participation in a historic attempt to restore a major river to it's pre-channelization value.

Funds are also requested for continuing the study of Biscayne Bay in Dade County. This study would evaluate the cumulative effects of previous Federal construction activities in and around the bay and suggest possible solutions to bay problems.

The Golden Gate Restoration effort would explore the feasibility of redistributing water over an 813 square-mile area which has been over-drained by improper land development. This would restore marshlands, control wildfires, revitalize sport and commercial fisheries, and increase the area's depleted surface and groundwater supplies.

Funds for the implementation of the study of the Six Mile Cypress Strand, near Ft. Myers, will be used to restore and preserve this area so that it can act as a natural buffer between the Ft. Myers area and a regional airport. This proposal has been developed with full support by local citizens, who have passed a referendum imposing new taxes earmarked for the restoration effort.

A study of the St. Johns River Basin is also proposed to provide a water quality management plan.

Though the Biscayne Bay, Golden Gate, and Six Mile Cypress Studies are authorized and previously funded, no funds were included for them in President Reagan's FY 86 budget. We urge you to correct these omissions.

CROSS FLORIDA BARGE CANAL

Included in the appendix of our program booklet is a resolution by Florida's Governor and Cabinet recommending deauthorization of the Cross Florida Barge Canal and Federal participation in restoring a portion of the already constructed works.

CONCLUDING REMARKS

It is important to point out that the program which Florida is presenting today represents what we consider to be our basic needs. In order to be included in our Final Program, projects must undergo an extensive review process by interested State and local agencies within Florida. We would urge you to bear this in mind as you consider areas to reduce spending. We are very appreciative of funds appropriated in prior years. Should further clarification of the State's needs be necessary, please feel free to get in touch with us. Thank you.

PUBLIC WORKS APPROPRIATIONS

FOR FISCAL YEAR 1986

FLOOD DAMAGE PREVENTION (AND WATER SUPPLY)

Construction (Includes Continuing Planning and Engineering)

Central and Southern Florida Flood Control Project
(Study and Construction)

Estimated Federal Cost	$805,000,000
Estimated Non-Federal Cost	422,000,000
Federal Funds Through FY 85	287,056,000
Non-Federal Funds Through FY 85	52,740,000
President's Budget	13,000,000
State of Florida Request FY 86	13,000,000
Benefit Cost Ratio: 4.8:1.0	

Project Sponsor: South Florida Water Management District

Project History/Description

The Central and Southern Florida Flood Control Project (C&SFFCP) is a massive system of water control works first authorized by Congress in 1947. The project area encompasses approximately 17,930 square miles over all or part of 16 counties and includes the Kissimmee River Basin, Lake Okeechobee and its regulatory outlets, a large portion of the Everglades, and the lower east coast of Florida. Included in the project are a series of levees, canals, water conservation areas, control structures and similar works designed to provide optimum conservation, management, and use of the water resources in the region.

The following project components are proposed for FY 86: (1) Protecting the Herbert Hoover Dike around Lake Okeechobee by revetment construction; (2) Further planning for C-131 (St. Lucie County Irrigation Water Supply; (3) Reconstruction of Hurricane Gate 4 and Pump Station 5-9; and (4) Design of the Western C-51 Project.

Project Justification

In the first half of this century heavy seasonal rains combined on several occasions with the passage of hurricanes to cause extensive long-lasting flooding. The C&SFFCP and its local sponsor, the South Florida Water Management District, are the result of Federal and State responses to the severe flooding of 1947. South Florida also experiences periodic severe droughts, and, as was mentioned above, the project was expanded in 1968 to include increased storage and conservation of water and improved distribution of water throughout the project area. This expansion has acquired greater importance as a result of floods in 1982 and extreme droughts in 1971 and 1981.

The population of South Florida continues to grow dramatically, and the potential benefits of both flood control and water conservation in the project area are increasing accordingly. The project is capable of providing the water management badly needed by South Florida.

Four River Basins Project
(Construction)

Estimated Federal Cost	$197,000,000
Estimated Non-Federal Cost	131,500,000
Federal Funds Through FY 85	68,971,000
Non-Federal Funds Through FY 85	12,467,000
President's Budget	2,500,000
State of Florida Request FY 86	2,500,000
Benefit Cost Ratio: 1.8:1.0	

Project Sponsor: Southwest Florida Water Management District

Project History/Description

The Four River Basins Project sponsored by the Southwest Florida Water Management District has been under construction since 1966 to provide flood protection for an area of approximately 6,000 square miles in 14 counties of central and southwest Florida. It includes part of the drainage basins of four major streams - the Hillsborough, Oklawaha, Withlacoochee, and Peace Rivers - and three smaller west coast watersheds - Pithlachascotee River, Anclote River and Lake Tarpon. The authorized plan includes numerous works in several parts of the project area. Some major components of the project have been completed, including the Tampa Bypass Canal, the Lake Tarpon Outfall Canal, Masaryktown Canal and the Tsala Apopka Outfall Canal along with related water control structures, railroad bridges, highway bridges and various relocations.

The FY 86 request is for continued construction of the Lower Hillsborough Wilderness Park at the Trout Creek Site at an estimated cost of $1,035,000 in Federal funds.

Project Justification

This facility is located close to the Tampa Metropolitan area and is a regional recreation resource. The further recreational development of the Lower Hillsborough Wilderness Park will allow greater use of the major land resources acquired as part of the Four River Basins Project.

Upper St. Johns Project
(Construction)

Estimated Federal Cost	Cost figures for this project are included in those for the Central and Southern Florida Flood Control Project
Estimated Non-Federal Cost	
Federal Funds Through FY 85	
Non-Federal Funds Through FY 85	
President's Budget	
State of Florida Request FY 86	
Benefit Cost Ratio: Under Development	

Project Sponsor: St. Johns River Water Management District

Project History/Description

The project area of the Upper St. Johns River Basin in east-central Florida encompasses some 2,000 square miles and consists of some 60 individual contributing sub-basins. The St. Johns River Water Management District (SJRWMD) in cooperation with the Corps of Engineers is currently in the

process of revising the general design components of the Upper St. Johns River Project. In 1974, the original plan was deemed unacceptable to the State, primarily for environmental reasons, and was deferred from further consideration.

The SJRWMD entered into an agreement with the Corps in 1976 to replan the project. The first step in the new process was to appoint a Technical Advisory Committee composed of regulated interests, environmental interests, and a representative from local, State, and Federal government. The first meeting of this committee was in May, 1980. The Committee attempted to formulate a plan or alternative which would accommodate flood control, water supply, and restoration of low flows caused by interbasin transfers of water, historical loss of nearly 300,000 floodplain acres to agricultural uses, and overdrainage in the basin. Low river and marsh water levels during the dry season cause water quality problems and reduce wildlife and recreational values both in the upper basin and the middle to lower (northern) portion of the river.

The Committee formulated a conceptual plan which was presented to the SJRWMD Board of Governors in September, 1980, accepted by the Board, and then passed on to the Corps for a review to assess the project for re-inclusion in the State's Public Works Program. The Corps expects to release the revised General Design Memorandum and EIS for review in mid 1985. Initial work on the Jane Creek Flood Detention Area is projected for early 1986. Therefore, FY 86 funding is requested by the SJRWMD to begin actual implementation of the project.

Project Justification

This project could begin reversing decades of environmental damage in the Upper St. Johns River Basin. The multi-faceted nature of the project is especially promising. Potentially, the project could offer flood control, water supply, restoration of minimum flows, and marsh restoration, with associated water quality benefits.

Northwest Florida Water Supply
(Study)

Estimated Federal Cost	$3,200,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	1,000,000

Project Sponsor: Northwest Florida Water Management District

Project History/Description

The Northwest Florida Water Management District has requested funding to study groundwater quality and availability for public supply in the entire coastal area of Northwest Florida. This project would include construction of test monitoring wells along the coast. These wells will provide information to 1) locate and map the fresh/salt water interface in the Floridan aquifer, 2) determine, based on configuration of saltwater interfaces, availability for public supply and other uses, and 3) assist in refining existing groundwater quality and quantity management plans and regulations to more accurately reflect existing groundwater conditions and potential changes. These wells will be incorporated into the existing monitoring programs of the Northwest Florida Water Management District.

The estimated total cost of this project is $3,200,000 and the funding request for FY 86 is $1,000,000. However, before any funding can be appropriated, the local sponsor must obtain congressional authorization for this study.

Project Justification

Population in the coastal areas has increased very rapidly in the last ten years, and the number of tourists visiting areas from Panama City Beach to Pensacola has also rapidly increased. The resultant demand for water during the summer months now equals the capacity of many public water supply systems. Thus, there is an acute need for a study to provide water managers with the information needed to meet these increasing demands for water.

St. Marys River Basin Floodplain
(Study)

Estimated Federal Cost	$1,000,000
Estimated Non-Federal Cost	1,000,000
Federal Funds Through FY 85	400,000
Non-Federal Funds Through FY 85	0
President's Budget	100,000
State of Florida Request FY 86	325,000

Project Sponsor: St. Johns River Water Management District

Project History/Description

The St. Johns River Water Management District is proposing continuation of funding for a study of proper floodplain management in the St. Marys River Basin. A reconnaisance report was released in late 1984. The St. Marys River forms, for most of its length, the northeastern boundary of the State of Florida and drains about 1500 square miles. About 540 square miles of the basin are in Georgia.

The District hopes to obtain a wide variety of useful information from the study including compilation of existing data, identification of all sub-basin boundaries, topographic mapping of the 100-year floodplain, mapping of existing land use, and the creation of a watershed management model. Although not a formal part of the proposal for a Corps' study, the study should improve interagency and interstate coordination for management of the St. Marys. Ultimately, formal or informal interstate agreements for management of the St. Marys may be devised.

The St. Johns River Water Management District has agreed to share one-half of the costs of the Feasibility Study. Federal funding will be needed in FY 1986 to continue the study.

Project Justification

This study would significantly improve water resource planning and management in the St. Marys River Basin. The basin would benefit from the first water resource baseline study ever undertaken in it and future problems may be prevented. The hydrology of the river system would be better understood and management of the basin would be improved. Flood damage costs could be reduced and human lives saved from disruption. Also, environmental changes such as structural modifications in the drainage system may be minimized by using the information gained in the study.

Suwannee River
(Study)

Estimated Federal Cost	$1,648,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	1,010,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	638,000

Project Sponsor: Suwannee River Water Management District

Project History/Description

Continuation of this study is requested by the Suwannee River Water Management District. The study is developing specific nonstructural programs for minimizing flood damages, and will also be used to develop and implement programs designed to protect recharge areas, protect surface and groundwater uses for water supply, irrigation, and pollution abatement, and to maximize environmental quality for fish and wildlife propagation. The study will also investigate programs on scenic quality, recreation, and small boat navigation for the Suwannee and its tributaries.

Recent related State actions include the redesignation of the upper Suwannee as an Outstanding Florida Water, the work of the Suwannee River Resource Planning and Management Committee, and adoption of floodplain acquisition as a goal by the Governing Board of the water management district.

Project Justification

Three floods of 100-year magnitude have occurred on the Suwannee over the past 35 years. The 100-year flood level has been exceeded on about 50% of the river floodplain at least once since 1947. A 1973 flood caused $8 million in damage claims, and a flood in the spring of 1984 also caused widespread damage. All parties agree that identification, protection, and management of the river and its associated resources are essential. This study would contribute substantially to those goals. The study is providing information needed to adequately protect the river and its floodplain resources.

Tampa Bay Region Hurricane Vertical Evacuation
(Study)

Estimated Federal Cost	$311,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	100,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	211,000

Project Sponsor: Tampa Bay Regional Planning Council

Project History/Description

The Tampa Bay region, on the Central Gulf Coast of Florida, is highly urbanized with two large cities, St. Petersburg and Tampa, located on opposite sides of the bay. Under present conditions, hurricane warnings cannot be given with sufficient time to evacuate vulnerable residential areas. A possible means to alleviate this problem is to evacuate some residents up into higher floors of certain buildings instead of attempting to completely evacuate all vulnerable residents. This would help prevent traffic jams on the major roads leading to safe inland areas. The FY 86 request is for $500,000 to follow up on the $100,000 appropriated by Congress in FY 85.

Project Justification

Vertical evacuation might shorten the total time needed for evacuation. The National Hurricane Center currently strives to provide 12 hours of warning that a hurricane is expected to strike a particular area. However, the Tampa Bay area requires 12 to 18 hours to successfully evacuate all residents to safe shelter. Vertical evacuation, if proven successful, could be applied to other areas where sturdy high rise structures are available.

The study should be closely coordinated with the Federal Emergency Mangement Agency and the Division of Emergency Management in the Florida Department of Community Affairs.

Withlacoochee River Regional Water Supply
(Study)

Estimated Federal Cost	$550,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	350,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	200,000

Project Sponsor: Withlacoochee River Regional Water Supply Authority

Project History/Description

The Withlacoochee River Regional Water Supply Authority is proposing "Phase II" of the water supply study previously carried out by the Corps of Engineers. The authority proposes that the initial survey of water supply problems and solutions be carried to a finer level of detail and design.

Citrus and Hernando Counties, located within the study area, were the two fastest-growing counties in the State of Florida in the 1970s. The Withlacoochee area was the only region of the State of Florida to exceed a 100% growth rate. This rapid growth, which is projected to continue, relates directly to the need to ensure a consistently high quality source of water supply in the Withlacoochee area.

Project Justification

This project would bring together the ongoing objectives of the Withlacoochee Regional Water Supply Authority and of the previously-completed Four River Basins Water Resources Management Study carried out by the Corps. Furthermore, although the previously funded three-year program sucessfully assembled a regional data base and made estimates of water needs and demands, an examination of the impacts and problems associated with the potential water supply alternatives for the area is still needed. This phase of the study will permit advanced planning, designing, and feasibility testing of water supply alternatives.

NAVIGATION

Construction (includes Continuing Planning and Engineering)

Fort Pierce Harbor
(Continued Planning and Engineering)

Estimated Federal Cost	$200,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	125,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	75,000
Benefit Cost Ratio: 3.6:1.0	

Project Sponsor: Ft. Pierce Port and Airport Authority

Project History/Description

Fort Pierce Harbor is in St. Lucie County on the east central Florida Coast. The Corps of Engineers is conducting Continued Planning and Engineering of a study to determine the feasibility of deepening and widening the Fort Pierce access channel and harbor area. The existing channel is 3.5 miles long and 25 feet deep extending from the Atlantic Ocean through Fort Pierce Inlet across the Indian River and the Intracoastal Waterway and terminating at Fort Pierce with a turning basin in front of the city docks.

The Corps has recommended that the existing project be modified to provide a channel 36 feet deep and 500 feet wide extending from the open ocean to within the existing jetties, then becoming 32 feet deep and 300 feet wide from that point to the existing turning basin area. The feasibility report also addressed environmental issues. Of special importance were the project impacts on a sabelleariid worm reef and nearby seagrass beds. The recommended channel deepening and widening would remove a substantial portion of the highly-productive worm reef and could negatively affect seagrass beds of importance to commercial and sports fisheries. FY 85 funding recently appropriated by Congress ($125,000) has allowed preconstruction planning to begin. FY 86 funding would complete this planning.

Project Justification

The proposed project would allow Fort Pierce Harbor to accommodate deeper draft ships which would result in transportation savings to shippers. This should result in an increase in shipping through the port which could in turn attract new businesses and increase employment in the area (unemployment in the Fort Pierce area considerably exceeds the state average). Balanced against this are serious adverse environmental impacts on worm reefs, seagrasses, and water quality.

Gulf Coast Passes Project
(Continued Planning and Engineering)

Estimated Federal Cost	To Be Determined
Estimated Non-Federal Cost	" " " "
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	To Be Determined
Benefit Cost Ratio: Big Sarasota 3.1:1.0	
Stump Pass 1.3:1.0	

Project Sponsor: West Coast Inland Navigation District

Project History/Description

This is an ongoing project to determine the feasibility of incorporating five passes along the central Gulf Coast of Florida into the existing Intracoastal Waterway. These passes were Stump Pass, Longboat Pass, Big Sarasota Pass, Dunedin Pass, and Hurricane Pass. Midnight Pass was later added to the study by Congressional request. The feasibility study is determining the practicality of maintaining these passes at 9 feet Mean Low Water to allow small pleasure and commercial boats access to and from the Gulf of Mexico. Dredging these passes might also provide a source of beach nourishment material for eroded beaches in the area. The draft feasibility report released in late summer of 1984 eliminates all but Big Sarasota Pass in northern Sarasota County and Stump Pass in Charlotte County from additional study.

Congress did not appropriate any funding for this project in FY 85. Thus, FY 86 funding will be needed to initiate preconstuction planning.

Project Justification

Improved navigation access would be provided by theis project. Incorporating the passes into the Intracoastal Waterway should also help bring about a certain consistency of navigation aids (buoys, signs, charts, etc.) that would be of great assistance to boaters, particularly those from out of state or otherwise unfamiliar with local waters.

Many of the beaches in this area are eroding. Thus, beach nourishment could be a valuable by-product of this project.

Mexico Beach Inlet
(Continued Planning and Engineering)

Estimated Federal Cost	To Be Determined
Estimated Non-Federal Cost	* * * *
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	To Be Determined

Project Sponsor: Town of Mexico Beach

Project History/Description

Mexico Beach is located on the coast of Bay County approximately 20 miles southeast of Panama City. This is a request for funds required to implement a feasibility study, expected to be completed late in 1985. The feasibility study is now evaluating alternatives for modifying the entrance to a canal so that navigation into and from the canal would be enhanced. The study is also evaluating the possible use of spoil taken from the canal to renourish adjacent beaches.

The canal in question is not associated with a natural inlet and is approximately 50 feet wide, 4,000 feet long, and 8 feet deep. The canal provides access to the open waters of the Gulf of Mexico for boats launched at the three marinas located along the sheltered stretches of the canal. Total launchings from the marinas are in excess of 10,000 per year.

Project Justification

The economy of the Mexico Beach area is tourist-dependent, and tourists come to Mexico Beach for basically two activities—fishing (mostly from boats) in the Gulf of Mexico, and beach related recreation. Fishermen and other boaters using the three marinas located along the canal in question generate a significant portion of Mexico Beach's revenues. When the canal inlet is closed, most of this boating revenue is lost. In addition, many boaters who would otherwise visit Mexico Beach go elsewhere due to the uncertainty of passage to and from the canal.

A channel mitigation project at Mexico Beach could have other important benefits. Redesign of the jetty at the mouth of the canal could reduce or eliminate the jetty's contribution to erosion of adjacent beaches. In addition, suitable spoil material from the canal could be used to renourish these beaches. Finally, safe refuge could be provided for boats during storm conditions. Currently, no safe harbor exists between Port St. Joe and Panama City, a distance of approximately thirty miles.

Mill Cove (Jacksonville Harbor)
(Continued Planning and Engineering)

Estimated Federal Cost	$200,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	125,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	75,000
Benefit Cost Ratio: 1.5:1.0	

Project Sponsor: Jacksonville Port Authority

Project History/Description

The Jacksonville Port Authority has requested funding for the Mill Cove Project. Mill Cove is located approximately 12 miles from the Atlantic Ocean on the St. Johns River in the City of Jacksonville. It covers an area of 6 square miles and has an average depth of 3.5 feet.

Much of Mill Cove was formerly part of the St. Johns River with its depth averaging 6 to 7 feet. During the early 1950's, the Dame Point-Fulton Cutoff was constructed in the interest of improving navigability in the St. Johns River as a part of the Jacksonville Harbor Project. This construction, and completion of the 38-foot harbor deepening project in 1976, reduced the flow of water through Mill Cove and increased sedimentation. This has resulted in small boat navigation problems, recreational limitations and alleged loss of land values by waterfront owners. The requested project would modify the hydraulic flow through Mill Cove and construct a new small boat channel.

FY 86 funding would be needed to complete this preconstruction planning. Special attention will be needed in the planning to re-evaluate very carefully the need for the small-boat channel. Both the Corps and the state support, at this time, only the circulation feature.

Project Justification

Sedimentation has reduced depths in most of Mill Cove, and it eventually may become too shallow to support commercial and recreational activities. Increased circulation of water flow would restore and maintain depths and improve water quality and habitat areas within the cove. Construction of a small boat channel could enhance commercial and recreational navigation activities.

Port Canaveral Project
(Construction)

Estimated Federal Cost	$25,800,000
Estimated Non-Federal Cost	4,249,000
Federal Funds Through FY 85	9,962,000
Non-Federal Funds Through FY 85	0
President's Budget	2,300,000
State of Florida Request FY 86	2,300,000

Benefit Cost Ratio: 3.2:1.0

Project Sponsor: Canaveral Port Authority

Project History/Description

The Canaveral Port Authority is requesting funding to complete the dredging of a channel and turning basin to 31 feet. Port Canaveral is located on the east central coast of Florida approximately 150 miles south of Jacksonville.

Project Justification

Port Canaveral has become an important energy port providing facilities for low cost ocean transportation of bunker fuel for the area's electric power plants and for the import and export of bulk commodities such as cement, newsprint, salt, citrus concentrate, frozen fish, and scrap metal. The port's business is growing along with the unprecedented growth of the central Florida region. As of now, all piers at the port are fully used or committed to projects under development, and there is no room for expansion for deep draft ship operations.

Completion of the western turning basin as soon as possible is particularly important. Unstable sediment conditions there are making harbor depth maintenance more difficult and costly. Project completion would significantly reduce maintenance dredging, since bulkheading (which would be completely funded by the port authority) could be completed and depth would be generally equalized. This would reduce the environmental impacts on the harbor area and the need for large spoil areas.

DER permits have been obtained. The Port Authority is working with the permitting staff of the Corps as well as the U.S. Fish and Wildlife Service and other agencies in attempting to devise an improved environmental mitigation plan.

Port Manatee Project
(Construction)

Estimated Federal Cost	$11,340,000
Estimated Non-Federal Cost	7,500,000
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	11,340,000
Benefit Cost Ratio: 16.6:1.0	

Project Sponsor: Manatee County Port Authority

Project History/Description

The Port Manatee Project is a proposal for Federal assumption of maintenance dredging of the existing navigation channel constructed by the Manatee County Port Authority in 1969-71. The proposed plan involves both removal of materials deposited in the channel since its construction and new construction at both ends of the channel to improve the safety of navigation. The channel dimensions would be 40 feet deep at mean low water (the same as originally constructed by the Port Authority) plus two feet allowable overdredging. Total channel length would be 3.0 miles, extending from the port facilities to the main Tampa Harbor Channel. The existing turning basin would be expanded about 6.6 acres.

The northwest end of the Manatee Harbor Channel would intersect the main Tampa Harbor Channel in an expanded "widener". The west side of the channel would be enlarged in a circular path with a radius of 3,000 feet beginning 2,700 feet from the intersection. The east side of the channel would be changed to a 45 degree transition beginning 1,000 feet from the intersection.

The project includes an attempt to mitigate for the environmental damage done by the dredging. Ten acres of an existing above-water spoil island would be lowered to -2 feet Mean Low Water to compensate for the destruction of 6.6 acres of vegetated shallow bay bottom caused by the enlargement of the turning basin. Vegetation planting is not planned, but the Corps of Engineers believes that the lowered area will revegetate itself naturally.

The Feasibility Report was transmitted to Congress in early 1985 with an unfavorable recommendation on authorization from the Acting Assistant Section of the Army. The only reason given for the unfavorable recommendation was that project authorization should be preceded by "generic deep draft user legislation".

Project Justification

The Port of Manatee now serves the local area both for oil imports and for phosphate exports. The Feasibility Report and the Environmental Impact Statement for the proposed project were published in 1979 and assumption for maintenance dredging for the "Environmental Quality" plan was recommended.

Tampa Harbor Deepening Project
(Construction, Continuing Planning and Engineering)

Estimated Federal Cost	$222,700,000
Estimated Non-Federal Cost	5,753,000
Federal Funds Through FY 85	165,087,000
Non-Federal Funds Through FY 85	996,000
President's Budget	8,388,000
State of Florida Request FY 86	8,388,000
Benefit Cost Ratio: 2.2:1.0 (Main Channel)	
2.5:1.0 (Branch Channels)	

Project Sponsor: Tampa Port Authority

Project History/Description

The Tampa Port Authority is requesting FY 86 funding for the ninth year of this harbor deepening project. The funds would permit (1) dredging of central segments of the main harbor channel and (2) dredging of central segments of the main harbor channel and (3) preconstruction planning for deepening and widening of several branch channels and turning basins: the Ybor Channel and the turning basin at its entrance; the Hillsborough Cut "D" and Sparkman Channels; and the Port Tampa Channel and its turning basin.

The spoil disposal plans place all material from both construction and maintenance dredging in open water in areas of Tampa Bay and the Gulf of Mexico and on a beach area on Mullet Key. In 1978, concerns arose as to whether the dredging associated with the Tampa Harbor Deepening Project might have an adverse effect on the Floridan Aquifer. It was thought that deepening the existing channel might breach the top of the Floridan Aquifer, thereby increasing outward flow or allowing salt water intrusion, depending on the potentiometric head. In 1979, a study was initiated by the Tampa Office of the USGS to address this issue. The study report indicated that the Tampa Harbor Channel dredging will have no significant effect on the Floridan.

In 1982, dredging was suspended by court order as a result of a lawsuit by Manatee County opposing the choice of spoil diposal sites made by the Corps of Engineers. EPA and the Corps have now selected an interim site. Congress included an additional $1,500,000 in the FY 84 budget for spoil disposal expenses.

Project Justification

Benefits accrue from the lower costs of transporting goods in more economical, deeper draft vessels. For Tampa Harbor, approximately eighty percent of this benefit will be attributed to cheaper shipments of phosphate ore products. Tampa Harbor handled almost 48 million tons in 1984, making it the nation's eighth largest port.

Clearwater Spoil Disposal
(Study)

Estimated Federal Cost	$236,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	60,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	176,000

Project Sponsor: City of Clearwater

Project History/Description

The study is evaluating spoil disposal alternatives for necessary maintenance dredging of navigation channels in Clearwater Bay. Clearwater is in Pinellas County on the west-central coast of Florida.

Specific construction projects anticipated in the future include the following:

(1) Maintenance of the Intracoastal Waterway;
(2) Access to Dunedin Pass;
(3) Access to the new Sand Key Coast Guard Station;
(4) Maintenance of public and private marina facilities; and
(5) Restoration of residential finger canal water quality and navigation

The estimated total cost of the study is $236.000. In the FY 85 appropriations bill, Congress included $60,000 to begin the study. Thus, FY 86 funding would be needed for continuation of the study.

Project Justification

Population in this area is increasing rapidly. Growing commercial and recreational actvities will increase the need for maintenance dredging. At the present time, there is little provision for spoil disposal, and there is no agreement over the quality of this material.

Escambia River Channel
(Study)

Estimated Federal Cost	$460,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	210,000
Non-Federal Funds Through FY 85	0
President's Budget	83,000
State of Florida Request FY 86	250,000

Project Sponsor: Escambia County

Project History/Description

This study is evaluating the feasibility of deepening the Escambia River Navigation Channel so that it could more safely accommodate barge traffic. The project site is at the mouth of the river as it enters Escambia Bay near Pensacola.

The navigation channel is now heavily used for barge transportation to and from Monsanto Textiles Company and Gulf Power's Crist Steam Plant. Approximately 140 barges use the channel each month. The channel extends upstream from the river mouth approximately seven miles and varies in width from 100-175 feet. At the present time, the channel is maintained at an authorized depth of ten feet. This is adequate immediately following dredging, but siltation and shoaling quickly reduce the depth and impede barge traffic. Satisfactory spoil disposal plans must be developed as part of the study process.

Project Justification

The Gulf Power Crist Stream Plant is a major employer in the Pensacola areas and it supplies electrical power to thousands of customers. The Monsanto Textiles Company is the largest non-governmental employer in Escambia County. Thus, unhindered barge traffic to these companies is essential to the area's economic health. The Escambia River Channel Study would determine the project alternative most likely to allow safe, economical barge traffic on the river.

Jupiter Inlet
(Study)

Estimated Federal Cost	$186,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	60,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	126,000

Project Sponsor: Jupiter Inlet District

Project History/Description

This study would evaluate the economic feasibility of providing and maintaining an inlet configuration that will permit navigation of small boats from the Loxahatchee River to the Atlantic Ocean. Jupiter Inlet is located in northern Palm Beach County on the southeast coast of Florida, about 16 miles south of St. Lucie Inlet and 14 miles north of Lake Worth Inlet. It is a natural waterway connecting the Loxahatchee River with the Atlantic Ocean. Problems of sedimentation and erosion along both banks of the inlet have become a matter of concern in recent years.

Jupiter Inlet is also affected by navigational difficulties due to hazardous waves and inadequate depths across the ocean bar at its entrance. Its use is currently limited to boaters with knowledge of local conditions. In the past twenty years approximately ten people have been killed in boating accidents at the inlet. FY 86 funding will be needed to continue the study. Adequate spoil disposal plans must be developed as part of the study.

Project Justification

The project would directly benefit the pleasure boaters and commercial fishermen in the area by decreasing the danger associated with the inlet. It would also bring an increase to the marine oriented business of the area, and attract tourism.

Lower St. Johns River Enhancement
(Reconnaissance Study)

Estimated Federal Cost	$140,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	140,000

Project Sponsor: Duval County (City of Jacksonville)

Project History/Description

The City of Jacksonville has requested funding for this study to assess the Jacksonville Harbor Channel in the St. Johns River from the Atlantic Ocean to the vicinity of the Port of Jacksonville for possible improvements to navigation, shoreline erosion and recreation. The study would address the following problems:

1. Navigational hazards and channel blockages;
2. Shoreline erosion and flood protection;
3. Production of potential disease vectoring mosquitoes from dredged material disposal sites; and,
4. Inadequate recreational access.

This study is intended to identify the problems caused by years of neglect and to determine methods to restore and enhance the shoreline and environ-

ment in general. The study will include specific recommendations for removing hazards, reducing impact of spoil sites and reducing mosquito production.

FY 86 funding would be used to initiate the study.

Project Justification

This study is expected to result in recommendations to decrease erosion by stabilizing the shoreline and dune areas, increase flood protection, improve navigation and navigational aids, reduce the impact of spoil sites, reduce non-point sources of contamination, restore salt water marsh areas and improve recreational facilities. Proposed channel and navigational improvements will benefit port and maritime interests. Shoreline stabilization and flood protection will enhance development of waterfront lands and increase recreational benefits.

Miami Harbor Channel
(Study)

Estimated Federal Cost	$750,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	571,000
Non-Federal Funds Through FY 85	0
President's Budget	179,000
State of Florida Request FY 86	179,000

Project Sponsor: Dade County

Project History/Description

This ongoing study is an evaluation of the navigation problems associated with the present configuration of Miami Harbor. The specific problems being addressed are the possible hazards presented by a 60° turn in the offshore access channel, the constriction of the main ship channel in Government Cut from 500 feet to 400 feet, and the existing 1600-foot diameter turning basin.

The bend in the access channel may present a safety and navigation problem which could be increasing as larger ships use Miami Harbor more frequently. Due to the bend, the channel can only be used for one-way traffic, and several groundings of large vessels have occurred over the past few years. The constriction of the ship channel inside Government Cut causes a navigational hazard compounded by strong tides and currents. The main turning basin presents problems to ships over 1,000 feet long in positioning and in dealing with tides, currents and winds while turning. Adequate spoil disposal plans must be developed as part of the feasibility study.

Project Justification

Project benefits could include a reduction in delays in navigating the access channel, a reduction of the need for tug services in the access channel and turning basin, and an increase in the safety of the harbor, particularly for larger ships. The project is strongly supported by the Biscayne Bay Pilots Association.

Miami River Cleanup
(Implementation)

Estimated Federal Cost	To be determined
Estimated Non-Federal Cost	$ 0
Federal Funds Through FY 85	183,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	200,000

Project Sponsor: Dade County

Project History/Description

The study area includes the six miles of the Miami River in Dade County from its mouth past 36th Street where it joins the Miami Canal, as well as the 14 miles of the canal within Dade County. An ongoing study is investigating the feasibility of various actions to improve water quality in the Miami River.

The river is a Federal navigation project with authorized channel depths of fifteen feet. Development over many years has caused serious water quality problems in the river and it may be advisable to remove the contaminated sediments in the channel. Studies already completed by the Corps and the State confirm that the sediments are heavily-polluted. However, in the late 1970s, the Corps suspended the completion of the study, pending action by the local sponsor to reduce the continuing pollutant loading to the river. Dade County has made progress in this area.

Another related event is the Governor's appointment of a Miami River Management Committee to devise means of improving all the assets of this urban waterway. Water quality improvement is an objective of the committee. Congress has appropriated $100,000 for FY 85 to reactivate this study. FY 86 funds would be used for the beginning of implementation. At this point, it appears the Corps will not recommend federal financial participation in implementation, on the grounds that project benefits accrue to environmental enhancement rather than the more usual or authorized Corps mission of navigation improvement.

Project Justification

The Miami River is an under-used urban resource. The Miami River Management Committee and Dade County are striving to improve its value for navigation, recreation, tourism and as an aesthetic amenity. The polluted sediments in the navigation channel are degrading water quality and preventing full use of a major urban river.

Port Canaveral
(Reconnaissance Study)

Estimated Federal Cost	$50,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	50,000

Project Sponsor: Canaveral Port Authority

Project History/Description

The Canaveral Port Authority is requesting a feasibility study of dredging the Canaveral Harbor Channel and other areas of Port Canaveral to sufficient depths to allow for economical coal importation. The study would also evaluate a possible expansion of Federal maintenance dredging at the port.

Port Canaveral is located on the east central coast of Florida approximately 150 miles south of Jacksonville. This proposed study springs from a lease agreement executed in 1980 between a shipping company and the port authority. The shipping company is planning to locate a coal offloading, storage, and transportation facility at Port Canaveral. The deep draft nature of the coal carrying vessels would require a channel depth of at least 41 feet. Thus, the port authority is requesting a feasibility study of deepening several turning basins and channels to 41-45 feet and of other basins and channels to at least 35 feet.

Project Justification

A coal offloading, storage, and transporting facility at Port Canaveral could be used to provide coal economically for power plants in central and eastern Florida. The coal would replace petroleum; this substitution is consistent with Federal policy aimed toward restricting petroleum imports. The most economical coal carrying vessels require a channel depth of 41-45 feet, and Port Canaveral currently is not deep enough to accommodate such vessels fully loaded.

Maintenance dredging of the various channels and turning basins at Port Canaveral is currently done by the port authority, the Corps of Engineers, and the Navy. This multiple maintenance situation is confusing, cumbersome, and inefficient. Many contracting conflicts have resulted and have made dredging more expensive and time consuming than it would have been if done under a single contract. Federal assumption of this maintenance dredging would also alleviate these problems. Adequate spoil disposal plans must be developed during the feasibility study.

Port Everglades
(Reconnaissance Study)

Estimated Federal Cost	$45,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	45,000

Project Sponsor: Port Everglades Authority

Project History/Description

This is a proposed new study of the desirability of modifying the existing federal navigation project at Port Everglades. Port Everglades is managed by the Port Everglades Authority, a special district in Ft. Lauderdale and Hollywood, Florida. The Port serves several import and export markets. The Port is the fourth-largest cruise ship port in the world, includes an active Foreign Trade Zone, a major containerization trade, significant general cargo business, and serves as a very large petroleum importer.

The Port Everglades Master Plan projects expansion of cargo and especially of container business. Growth in container tonnage will require improvement of landside and channel facilities. The study would generate alternative modifications to the existing federal navigation project and identify engineering, economic, and environmental concerns.

Project Justification

The enhancement of Port Everglades would benefit its market hinterland, which is most of South Florida. The 1983 Master Plan estimates the regional economic impact of Port Everglades activities to total $412 million. It also projects that year 2000 economic impacts will be between $1.45 and $2.25 billion, depending partly on whether a substantial part of the port's petroleum business is diverted by a new petroleum products pipeline. In either case, improvements of Port Everglades can substantially contribute to the well-being of the regional economy.

BEACH EROSION CONTROL

Broward County Beaches Project
(John U. Lloyd State Beach Recreation Area)
(Construction)

Estimated Federal Cost	$3,735,000
Estimated Non-Federal Cost	1,601,000
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	3,735,000
Benefit Cost Ratio: 2.63:1.0	

Project Sponsor: Broward County Erosion Prevention District

Project History/Description

The project is to renourish approximately 1.5 miles of beach extending to the south of Port Everglades' south jetty on Florida's southeast Atlantic Coast. The request is for reimbursement to Broward County of $3,735,000 for renourishment with 889,088 cubic yards of fill. Placement of the fill is scheduled for the summer of 1985. The project was authorized by Congress in 1965 with initial renourishment accomplished in 1976.

The project area is a portion of the John U. Lloyd State Beach Recreation Area. Erosion and shoreline recession of the beach during the seven years since renourishment has also threatened the integrity of the seawall at the U.S. Navy's Surface Weapons Center next to Port Everglades' south jetty and resulted in the loss of recreational beach at the State Recreation Area. Project construction will depend on whether concerns about possible damage to offshore reefs and any other environmental concerns can be resolved.

Project Justification

John U. Lloyd State Beach Recreation Area is a facility serving residents and tourists interested in enjoying beach-related activities. Offered are nature walks, fishing, canoeing, swimming, skin and scuba diving, and sun-bathing. An adequate beach area is required to fully provide these activities. The design beach would also provide protection for upland structures now threatened by wave action.

Captiva Island Beach Nourishment
(Construction)

Estimated Federal Cost	$1,000,000
Estimated Non-Federal Cost	4,000,000
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	1,000,000
Benefit Cost Ratio: Under Review	

Project Sponsor: Captiva Erosion Prevention District

Project History/Description

Captiva Island is on Florida's southwest coast near Fort Myers. This is a request for reimbursement of beach restoration costs for 3.0 miles of beach on Captiva Island. The restored beach would be approximately 100 feet wide and is to be constructed in two phases by local interests in accordance with the overall Federal Beach Erosion Control Study for Lee County completed by the Corps of Engineers in 1969. Federal reimbursement funds

under the Section 215 program are being requested only for the second phase of the project (3.0 miles of the 4.7 mile total). Adequate public parking and access is necessary.

Project Justification

In 1969, at the request of the Lee County Commission, the Corps prepared a study on beach erosion in Lee County. The study reported that the beaches were severely eroded and recommended a Federal project of beach nourishment for erosion control. Historical records show over 700 feet of shoreline recession since 1906, with a maximum annual loss of more than 39 feet. Erosion rates measured from 1967 to 1979 are three to four cubic yards per linear foot of beach per year. This project, by renourishing the beach area, would provide protection to upland property, provide hurricane and storm protection for portions of a road which is the only land access and emergency evacuation route, and provide additional public recreation area.

Dade County Beach Erosion Control and
Hurricane Protection Project
(Construction)

Estimated Federal Cost	$48,200,000
Estimated Non-Federal Cost	48,086,000
Federal Funds Through FY 85	33,044,000
Non-Federal Funds Through FY 85	25,140,000
President's Budget	2,300,000
State of Florida Request FY 86	2,300,000
Benefit Cost Ratio: 3.2:1.0	

Project Sponsor: Dade County

Project History/Description

This project is intended to provide renourishment, as needed, for Dade County's Beach Erosion Control and Hurricane Protection Project. The overall project involved the dredging and placing of 14 million cubic yards of material to form a protective and recreational beach and protective dune for 9.3 miles of shoreline between Government Cut on the south and Bakers Haulover on the north. This shoreline is adjacent to Miami Beach, Surfside, and Bal Harbour Village. Beach construction was completed in 1982, but average annual renourishment need is projected to be 210,000 cubic yards. The renourishment material is being obtained from off-shore areas by dredging.

Project Justification

The project is providing beach erosion control and hurricane surge protection for beaches of great economic importance. Dade County's beaches provide badly needed recreational opportunities for the densely-populated coastal sections of Dade County. In addition, the beaches are extremely important tourist attractions, and the economy of the area would suffer significantly if the beaches were not preserved.

Dade County Beaches - Haulover Beach Park North
(Construction)

Estimated Federal Cost	$4,000,000
Estimated Non-Federal Cost	4,000,000
Federal Funds Through FY 85	218,500
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	4,000,000
Benefit Cost Ratio: 2.8:1.0	

Project Sponsor: Dade County

Project History/Description

This is a project proposed by Dade County to provide control of beach erosion and hurricane-induced flooding for the coastal area north from Haulover Beach Park. Construction of this project must still be authorized by Congress. Thus, the request for FY 86 is for $4,000,000 to initiate construction.

Project Justification

Beach erosion in the project area results from a combination of factors including prevailing winds, swells, storms, beach development, protective structures, and the presence of artificial inlets. Recreational beach has been lost, beach front property is threatened with erosion, and seawalls have come under direct wave attack. Many of the problems now associated with the shoreline are the result of shoreline alternations made without knowledge of the sediment transport mechanism in the area or without regard for the protective value and sediment supply of the beach dune system. A general deficiency in supply of littoral material reaching the area plus the action of littoral barriers have resulted in severe erosion over parts of the project area. Permitting problems will have to be resolved.

Duval County Beach Renourishment Project
(Construction)

Estimated Total Federal Cost	$13,600,000
Estimated Total Non-Federal Cost	12,024,000
Federal Funds Through FY 85	10,469,000
Non-Federal Funds Through FY 85	6,384,000
President's Budget	1,500,000
State of Florida Request FY 86	1,500,000
Benefit Cost Ratio: 5.5:1.0	

Project Sponsor: Duval County (City of Jacksonville)

Project History/Description

This renourishment project is to replace sand which has been lost as a result of the combined effects of tides, storms, and wind since the original beach renourishment project of 1978-1980. Since completion of the beach nourishment project, there has been a significant loss of beach and the FY 86 request is for maintenance renourishment which was planned for and anticipated in the original study.

The Corps anticipates a two-part effort for this renourishment. Sand for the northern half of the project will be derived from maintenance dredging of Jacksonville Harbor. The contract for this phase was advertised in the summer of 1984 and bids opened shortly thereafter. Actual construction began in late October 1984. The second phase is planned for spring 1985; the sand will be dredged from offshore sites. The necessary permits have been obtained.

Project Justification

Since 1980, considerable beach area has been lost to erosion by winds and tides. Measures to reduce or prevent loss of windblown sand will be studied and applied where possible. This maintenace renourishment is necessary to avert complete loss of beach areas which were created by the original construction program and will re-establish a valuable recreational beach and provide protection of roads and real estate against storm damage.

Indian River County Beach Nourishment: Sebastian Inlet Component
(Construction)

Estimated Federal Cost	$740,000
Estimated Non-Federal Cost	317,000
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	740,000
Benefit Cost Ratio: 2.0:1.0	

Project Sponsor: Indian River County

Project History/Description

This is the Sebastian Inlet State Park component of the Indian River County beach nourishment project. Indian River County is acting as local sponsor for this component; nonfederal costs are expected to be provided by the Florida Department of Natural Resources. The project still needs congressional authorization.

The Sebastian Inlet plan recommended by the Corps involves placing fill along almost the entire shore of the park, amounting to 1.68 miles. A total of about 202,000 cubic yards of fill would be used for the initial phase of the project. It is estimated that anb equal amount of fill would be required every 5 years thereafter. A special environmental hazard of this project is possible effects on the nesting of sea turtles. This region of the coast is an important nesting area for sea turtles (primarily Atlantic loggerheads). Turtle nesting begins during the first week in May and continues through September. The potential harm to sea turtles resulted in a U.S. Fish and Wildlife Service recommendation that the beach nourishment project be conducted only from November to May.

The principal borrow area is located about 3,000 feet offshore, and about 4 miles south of the Park. In addition, it may be possible to use some of the materials from the periodic dredging of Sebastian Inlet.

Project Justification

Benefits to be derived from beach nourishment in this area are increased recreational space provided by the added material and prevention of storm damage to public property.

Indian River County Beach Nourishment: Vero Beach Component
(Construction)

Estimated Federal Cost	$1,381,000
Estimated Non-Federal Cost	1,381,000
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	1,381,000
Benefit Cost Ratio: 2.0:1.0	

Project Sponsor: Indian River County

Project History/Description

This is the Vero Beach component of the Indian River County beach nourishment project. Both components need congressional authorization. The Vero Beach recommended plan involves 1.74 miles of beach. This phase of the project does not seem to have quite as much potential impact on turtle nesting as the Sebastian Inlet Park component.

If construction is authorized by Congress, construction could begin soon. At present, the favorable recommendation of the Army Corps of Engineers has not been released by the Assistant Secretary of the Army. The need for the project was emphasized in late 1984, when a heavy storm caused severe erosion along much of Florida's south Atlantic Coast.

Project Justification

Benefits to be derived from beach nourishment in this area are increased recreational space provided by the added material and prevention of storm damage to private and public property, and the reduction of the need for storm protection structures, such as seawalls, revetments, groins, bulkheads, etc., which in themselves lead to further beach erosion.

Monroe County Beach Erosion Control
(Continued Planning and Engineering)

Estimated Federal Cost	$218,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	100,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	118,000
Benefit Cost Ratio: 1.8:1.0	

Project Sponsor: City of Key West

Project History/Description

This project would, in total, restore Smathers Beach in Key West and fill the adjacent east and west shorelines with sand, perform periodic nourishment of the beach for 50 years, construct two groins, and relocate a boat ramp. The plan also includes filling nearshore depressions and seagrass planting. The present recommendation of the Corps and the State of Florida is that only the existing beach be renourished.

The project area was created in the late 1920's by the construction of South Roosevelt Boulevard and the adjacent seawall. The Corps concluded in a 1957 study that, prior to 1957, a sandy beach periodically existed in the area for short periods of time. The 3,000 foot long Smathers Beach was constructed between March 1959 and April 1960, and consisted of a rock core and a sand cover blanket two feet thick. A site inspection by the Corps in 1978 indicated that a sand blanket was present only on the western half of

the beach and the rock core is exposed at the surface over the entire eastern half of Smathers Beach.

Project Justification

The 1984 Final Feasibility Report projected an annual gain in recreational resources of $1,007,200 and an annual damage cost savings of $61,200. The project is expected to improve the local tourist economy and provide local employment benefits. The number of users of the beach is projected to increase to 450,000 per year by 1989.

Funding is recommended for planning and engineering for the entire 9400-foot stretch of the project. However, actual construction should be done in phases as supplemental studies demonstrate the need for additional recreational beach areas and the acceptability of environmental impacts.

North Boca Raton Beach Restoration
(Construction)

Estimated Federal Cost	$2,365,785
Estimated Non-Federal Cost	2,941,515
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	2,365,785
Benefit Cost Ratio: 1.7:1.0	

Project Sponsor: City of Boca Raton

Project History/Description

This 1.7 mile beach nourishment reimbursement project is co-sponsored by Palm Beach County and the City of Boca Raton. Boca Raton is located in southern Palm Beach County between Palm Beach and Miami. The northern two miles of the Boca Raton City Beach have lost approximately 1,324,000 cubic yards of sand. This loss has reduced the natural storm protection provided by the beach, thus subjecting inland structures to possible damage by storm surge. Available beach recreational area has also been reduced. Permitting problems must be resolved.

Project Justification

The project would provide storm protection for upland properties including State Road AlA and City park structures. The majority of the beachfront property is City-owned. Therefore, the additional beach area would provide recreational space for residents and tourists.

Pinellas County Beaches Project
(Construction)

Estimated Federal Cost	$9,100,000
Estimated Non-Federal Cost	9,100,000
Federal Funds Through FY 85	500,000
Non-Federal Funds Through FY 85	500,000
President's Budget	1,300,000
State of Florida Request FY 86	1,300,000
Benefit Cost Ratio: 3.3:1.0	

Project Sponsor: Pinellas County

Project History/Description

Pinellas County is on the west-central coast of Florida with St. Petersburg as its largest city. The Pinellas County Beaches Project was authorized in

1966 and has resulted in the periodic nourishment of many miles of the Pinellas County Shoreline.

In May, 1984, the Corps of Engineers released a report on a reexamination of beach erosion along Pinellas County's beaches. The report stated that serious erosion and erosion-related damage persist in the project area and recommended initial and continued beach nourishment along most of the County's coastline. The project would have a benefit-cost ratio of 3.3:1.0 with first costs of about $28 million. The Federal share of costs would be about $14 million.

For FY 86, the County is requesting funding for three project components: (1) Indian Shores Breakwater and Advanced Renourishment, (2) Madeira Beach Groin Reconstruction and (3) Long Key/Pass-a-Grille Beach Nourishment.

Project Justification

Pinellas County is a densely-populated urban county with approximately 750,000 residents. The County also is a significant tourist area visited annually by approximately 3.5 million tourists who contribute nearly $1 billion to the area's economy. Those tourists are attracted to the County in part because of the sandy beaches.

Many of Pinellas County's beaches are critically eroded. This jeopardizes tourism and the extremely valuable property located along the beaches. Renourishment of these beaches will help maintain the County's economy by enhancing beach recreation opportunities and protecting shorefront property.

Sarasota County Beaches Project
(Venice/Caspersen Beach)
(Continued Planning and Engineering)

Estimated Federal Cost	$250,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	250,000
Benefit Cost Ratio: 1.8:1.0	

Project Sponsor: Sarasota County

Project History/Description

Venice/Caspersen Beach is in Sarasota County on the west-central coast of Florida about 50 miles southwest of Tampa. The county coast consists of five barrier islands separated by tidal inlets.

In 1964, Congress authorized a study of beach erosion problems in Sarasota County. At the County's request, the study was deferred in 1970 but resumed in 1978. In April of 1984, the Corps of Engineers released the project's Feasibility Report and Environmental Impact Statement. The report indicates a favorable benefit/cost ratio, especially for Venice/Caspersen Beach.

FY 86 funds would be used to develop a General Design Memorandum.

Project Justification

Local governments and private property owners have been renourishing beaches and building beach erosion control structures in Sarasota County for much of this century. In spite of these efforts, some of the County's beaches have eroded by more than 200 feet in the last 100 years. Sarasota County is experiencing explosive population growth and adequate beach

recreation should be provided for this population and for the ever-increasing number of tourists who visit the area. In addition, the destruction of abutting property improvements (including residences, multi-family developments, public roadways, and utility facilities) should be prevented.

Brevard County Beach Erosion
(Study)

Estimated Federal Cost	$272,000
Estimated Non-Federal Cost	133,000
Federal Funds Through FY 85	110,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	162,000

Project Sponsor: Brevard County

Project History/Description

This study is essentially an update of a 1967 beach erosion study. Brevard County is located on the east central Florida coast and includes Cape Canaveral and the John F. Kennedy Space Center. The 1967 study recommended restoration of the Cape Canaveral and the Indialantic-Melbourne Beach areas. These two projects were completed in 1975 and 1980, respectively, and periodic renourishment was recommended for both projects. Continued erosion of these restored areas and of the County's unrestored beaches has suggested a need for restudy of current annual erosion rates, the projected impact of continued erosion, and an estimated schedule for renourishment. The study would also provide specific recommendations for erosion control.

Project Justification

This study would determine the amount of material required to replenish sand lost to erosion by wave action, the renourishment schedule, and methods to reduce the erosion. The replenished sand would provide a barrier that would protect upland structures from erosion and undermining, and reduce or eliminate maintenance costs for structures now in place that were designed to reduce storm damage to the beach. The addition to the beach would provide enhanced and additional recreational areas for residents and for the tourists who comprise a major source of income for the area.

Flagler County Beach Erosion Control
(Study)

Estimated Federal Cost	$135,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	20,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	115,000

Project Sponsor: City of Flagler Beach

Project History/Description

Flagler County is in northeastern Florida about 50 miles south of Jacksonville. This study was initiated in 1977 to assess the condition and erosion problems of the beaches of Flagler County and to develop appropriate recommendations and corrective measures where necessary.

Much of the shoreline of Flagler County is undeveloped. Highway AlA itself is susceptible to erosion and is within 100 feet of the mean high water

line along most of the southern county oceanfront. Although much of the shoreline area presently is not developed, a massive residential community (ITT Palm Coast) is being designed and constructed in the northern part of the county where AlA turns inland.

The requested study would provide a comprehensive analysis of the pertinent coastal processes and provide technical assistance to Flagler County for the development of a local coastal zone management plan. Alternatives for management of that coastal zone would be determined that would allow prudent development without the need for costly structural protection projects.

Project Justification

The study would provide technical data on the erosion and storm damage processes along the Flagler County coastline. This information and the alternatives designed by the Corps could then be used by local governments to guide development of the coastal area and adjacent uplands. Prevention of shoreline erosion problems with planning seems much more reasonable than using structural techniques to correct the damage that would be allowed by lack of planning. A 1980 reconnaissance report emphasized the use of nonstructural measures which would help prevent inappropriate development of the Flagler County coastline.

Florida Statewide Beaches
(Study)

Estimated Federal Cost	$5,550,000
Estimated Non-Federal Cost	8,400,000
Federal Funds Through FY 85	250,000
Non-Federal Funds Through FY 85	0
President's Budget	550,000
State of Florida Request FY 86	550,000

Project Sponsor: Florida Department of Natural Resources

Project History/Description

This proposal by the Florida Department of Natural Resources is for continuation of a statewide study of the status and dynamics of the coastal processes affecting Florida's beaches. The study will provide a much improved technical basis for assessing future coastal changes (whether man-induced or natural) by systematically collecting essential data and identifying the factors that cause coastal changes. First year funds are being used to establish a statewide data collection network built upon the existing data bases, create a storm assessment system, and begin an intensive data collection effort along the 97 miles of shoreline from Juno Beach to Florida City (along Florida's southeast coast). Congress appropriated $250,000 of FY 85 funding to initiate this study. FY 86 funding will be needed to continue it.

Project Justification

The coast of Florida, which includes 800 miles of high quality sand beaches, is one of the State's most valuable natural resources. This study will provide vital information for coastal resource management. Benefits will include: 1) a better scientific basis for decisions on coastal development, 2) improving the effectiveness and reducing the cost of future coastal works, 3) an improved basis for preventing storm damages, 4) an improved basis for regulatory decisions, such as the Coastal Construction Control Line, and 5) a better understanding of the long-term effects of rising sea level.

ENVIRONMENTAL RESTORATION AND ENHANCEMENT

Biscayne Bay Survey Review
(Study)

Estimated Federal Cost	$1,660,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	240,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	700,000

Project Sponsor: Dade County

Project History/Description

This study is a comprehensive review of environmental impacts from Federally authorized and constructed projects in and adjacent to Biscayne Bay, Dade County, Florida. The Corps of Engineers, acting as the lead Federal agency in cooperation with the Federal Department of Transportation, is reviewing such projects as the Intracoastal Waterway, Government Cut, Bakers Haulover Inlet, the Central and Southern Florida Flood Control Project, and causeway construction, to determine whether these and other Federally authorized projects are having a detrimental impact upon Biscayne Bay and should be modified to improve the biological habitats and water quality of the bay. The study is addressing, but is not limited to, the effects of dredging and filling on circulation patterns and the flushing of problem areas, the effect of spoil islands on water quality, and the effects of modified freshwater inputs to Biscayne Bay on biological communities and water quality.

Congress authorized this study in 1980, appropriated $100,000 to begin it in FY 82, and has irregularly funded it since. A reconnaissance report was issued in 1984. The FY 86 funding request for $700,000 will be needed to continue this study.

Project Justification

Biscayne Bay and the adjacent shoreline have been subjected to intense development and alterations from Federally authorized construction projects. The cumulative impacts of these projects on Biscayne Bay are not known. However, locally funded studies have determined that water quality in the bay is poor, especially north of Rickenbacker Causeway. Excessive turbidity and reduced flushing are major problems. The information being generated by this study is needed for the development of guidelines for future use of the bay. A successful project will result in improved environmental quality of Biscayne Bay and enhancement of recreational opportunities.

Golden Gate Restoration
(Implementation)

Estimated Federal Cost	To be determined
Estimated Non-Federal Cost	" " " "
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	To be determined

Benefit Cost Ratio: Under Development

Project Sponsor: South Florida Water Management District

Project History/Description

The Feasibility study should be completed late in 1985. Possibly, project implementation could begin in FY 86. This study is examining the feasibility of redeveloping the water management system of the Golden Gate Estates (GGE) area. The study is sponsored by the South Florida Water Management District and its Big Cypress Basin Board. The system of canals and other drainage works constructed in the 1960's to provide drainage in the GGE area resulted in substantial damage to the land and water resources of western Collier County. Problems include disruption of natural flow patterns, major reductions in water table levels, increased salt water intrusion, frequent and severe wildfires (including early 1985) and abandonment of thousands of acres of prime agricultural lands. There are also indications that the Golden Gate canal system is interfering with water flows to the Big Cypress National Freshwater Preserve and lower estuarine areas of the Everglades National Park. Furthermore, engineering studies indicate that the system is inadequate as a flood control system and cannot pass a one-in-ten year storm without flooding.

Project Justification

The environmental disturbances which have resulted from the GGE canal system are substantial and well documeted. They include: 1) disruption of natural flow patterns and major transfers of water from one basin to another; 2) lowering of wet season water tables by as much as two to eight feet; 3) a reduction of the hydroperiod by two or three months; 4) increasing frequency of wildfires and 5) an increase in annual runoff by two to three times.

A redevelopment of this system is essential to mitigate continuing and severe disruptions to the water and land resources not only in the GGE areas itself, but also of areas north of GGE, and estuarine areas of Southwest Florida (particularly Fahka Union Bay and Naples Bay). If the present canal system is not significantly modified, adverse effects may also be felt in the nearby Corkscrew Sanctuary and in some estuarine areas of Everglades National Park.

Jacksonville Metropolitan Park
(Study, Code 710)

Estimated Federal Cost	To be determined
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	$100,000

Project Sponsor: City of Jacksonville

Project History/Description

The City of Jacksonville is requesting funding for a feasibility study under the Corps of Engineers' Code 710 recreational development program for an urban park located on the St. Johns River approximately 2 miles from downtown Jacksonville. There is a high demand for outdoor recreation facilities in this area and existing facilities do not meet current needs. The year 2005 Comprehensive Plan for the City of Jacksonville and some other studies have recommended a metropolitan recreation center in this area. Metropolitan Park is centrally located, has easy access to the river, and would be an ideal location for a marina and boat ramps. The FY 86 funding request is for $100,000 to initiate the study.

Project Justification

The Comprehensive Plan for Jacksonville and some other studies agree on the lack of ample opportunities for outdoor recreation activities in this area.

Metropolitan Park would increase recreation opportunities for residents and would attract visitors to the area.

The Code 710 Program remains under a moratorium. At this time, the proposed study can only be placed on a waiting list.

St. Johns River Basin Water Quality Management
(Study)

Estimated Federal Cost	$1,319,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 85	100,000
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	230,000

Project Sponsor: St. Johns River Water Management District

Project History/Description

Continuation of this study is proposed by the St. Johns River Water Management District. The study was authorized by language in the FY 84 Public Works appropriations bill, directing the Army Corps of Engineers to prepare "an interim water quality management plan for the St. Johns River Basin, Florida...at full Federal expense and in cooperation with local interests." An appropriation of $100,000 was made for this purpose in FY 84; there was not a subsequent FY 85 appropriation. An amount of $230,000 is requested for FY 86.

The study will provide a plan for the improvement of water quality in the St. Johns River. Currently available water quality data are now being collected and reviewed. Land use mapping will be one component of this effort. The need for changes or enlargements in the current monitoring program is being assessed. Eventually, the study will establish water quality goals for the basin, determine whether they are met in the various lake and stream segments, and recommend means of attaining these goals wherever possible. The Corps is working cooperatively with the St. Johns River Water Management District in this study.

Project Justification

The water quality of the St. Johns River has declined significantly in recent years, as demonstrated by numerous fish kills, algae blooms, and citizen complaints. This study will develop an overall plan to address these problems. The result will be important benefits to regional economics, aesthetics, and recreation. Fishery resources available for both commercial and sport uses would be enhanced from improved water quality management. Another benefit could be reduced expenditures for control of aquatic weeds.

Six Mile Cypress
(Implementation)

Estimated Federal Cost	To be determined
Estimated Non-Federal Cost	" " " "
Federal Funds Through FY 85	0
Non-Federal Funds Through FY 85	0
President's Budget	0
State of Florida Request FY 86	To be determined
Benefit Cost Ratio: Under Development	

Project Sponsor: Lee County

Project History/Description

The Corps Feasibility Study is expected to be completed in late FY 85. The purpose of this effort is the preservation and management of the Six Mile Cypress Strand by two means; 1) construction of water control structures to prevent overdrainage and 2) acquisition of environmentally sensitive land between Daniels Road and Ten Mile Canal.

The Six Mile Cypress Strand is one of the last major relatively undisturbed cypress areas in Lee County. The strand is located approximately three miles southeast of Fort Myers and runs from State Road 82 southwesterly for ten miles to its confluence with Ten Mile canal. Over the past several years, development pressures have begun to encroach upon the Strand. Overdrainage has occurred and exotic plants have begun to replace the native cypress. The Six Mile Cypress Strand forms a natural buffer between the Fort Myers urban area to the west and the Regional Airport to the east. A referendum for the public purchase of a major portion of the strand was overwhelmingly approved by the citizens of Lee County in November of 1976.

Project Justification

The Six Mile Cypress Project would protect a unique natural cypress strand from overdrainage and enhance new cypress tree growth in areas which historically supported such vegetation. This strand of cypress would also provide a natural buffer between the Ft. Myers Regional Airport and the urbanized Fort Myers area.

APPENDIX

Governor and Cabinet Resolutions
Cross Florida Barge Canal

RESOLUTION

WHEREAS, the Governor and Cabinet of Florida, sitting as Head of the Department of Natural Resources, on August 1, 1972, rescinded their previous policy supporting completion of the Cross Florida Barge Canal through the Oklawaha River Valley and on that date suspended their support of this project until such time as:

1 A new benefit-cost ratio study, which includes up-to-date interest rates and construction costs and re-evaluation of recreational benefits, is completed and demonstrates to the satisfaction of the State that this is a wise expenditure of taxpayers funds.

2. An environmental impact statement, as required by Section 102 of the National Environmental Policy Act, is completed and available to the State for final evaluation as to the environmental effects of the Canal.

WHEREAS, restudy documents were prepared and released by the U. S. Corps of Engineers in the summer of 1976 and did contain a draft environmental impact statement and a benefit/cost ratio study displaying up-to-date interest rates which were additionally updated in December 1976; and

WHEREAS, the Governor and Cabinet of Florida, sitting as the Head of the Department of Natural Resources, on December 16 and 17, 1976, did consider the restudy documents and take public testimony relative to the Cross Florida Barge Canal;

NOW THEREFORE BE IT RESOLVED THAT:

A. The Governor and Cabinet, sitting as the Head of the

Department of Natural Resources, and recognizing the authority of the United States Congress to complete the canal, respectfully:

1. Recommend against completion of the Cross Florida Barge Canal Project.

2. Request the United States Congress to de-authorize the Cross Florida Barge Canal Project.

3. Recommend to the United States Congress that it authorize and appropriate sufficient funds for federal participation in and implementation of the following recommendations:

(a) Establishment of a State-Federal Task Force to study and recommend the best disposition and use of the canal lands with special emphasis on:

(1) Restoration of the Oklawaha River, its designation as a wild and scenic river, and its inclusion in the Ocala National Forest;

(2) Use of other remaining canal lands for public recreational and environmental purposes especially to meet the present and future needs of the canal-area counties; and

(b) Lands previously supplied by the State of Florida to the Federal Government and not necessary for use by the Federal Government for a wild and scenic river system or Ocala National Forest be returned to the State of Florida.

4. Direct the staff of the Department of Natural Resources to coordinate state efforts in an interagency State-Federal Task Force to study and recommend the best disposition and use of the canal lands with special emphasis on restoration of the Oklawaha River, its designation as a wild and scenic river, and its inclusion in the Ocala National Forest.

5. Direct the Division of State Planning of the Department of Administration to study and make specific recommendations for applications to be made by the State of Florida to the United States Congress for funding of sewage treatment construction projects in the State of Florida, for federal impact funds for economically depressed areas, as well as other federal funds which will have an impact on the State of Florida.

B. The Governor and Cabinet, sitting as the Head of the Department of Natural Resources, recommend to the 1977 Florida Legislature that:

1. The responsibilities of the Canal Authority be amended in order to retain public ownership of the lands associated with the project as necessary to accomplish "A" above.

2. Legislation be enacted which will permit appropriate title to be secured for those lands currently held in easement as necessary to accomplish "A" above.

3. Title to the lands associated with the project retained by or returned to an agency of the state be transferred to the Trustees of the Internal Improvement Trust Fund.

4. Chapter 374, Florida Statutes, Part II (Sections 374.301-374.521) be repealed and any funds remaining in the accounts of the Cross Florida Canal Navigation District and not legally obligated, be returned to the counties in the District on a prorata basis, established by the tax monies furnished to the District by these counties.

5. Section 20.25(12), Florida Statutes, be amended to read "The canal authority of the State of Florida, created under part I of Chapter 374, is transferred by a type three transfer to the Department of Natural Resources and the functions shall be assigned to the Division of Resource Management".

6. All such state lands determined not to be necessary for recreation, wildlife or environmental preservation be sold at public sale to the highest bidder and the funds derived be refunded to the counties involved on a prorata basis in the manner established by the tax monies furnished by these counties for the Cross Florida Canal Navigation District. The total monies refunded to the various counties are to be calculated by converting the actual amount furnished to its present dollar value giving the effect of interest charged at average market rates being compounded annually over the total period of financial commitment. Should the funds so derived be in excess, any surplus will be returned to the different counties on a prorata basis. Should the funds so derived be insufficient, the Governor and Cabinet, sitting

as Head of the Department of Natural Resources, recommend to the Florida Legislature that they appropriate sufficient funds to fulfill this obligation.

C. The Governor and Cabinet, sitting as Head of the Department of Natural Resources, direct the staff of the Department of Natural Resources, upon approval and implementation of "B.5", to prepare any additional legislative recommendations for use or disposition of resources and facilities of the project consistent with the above recommendations.

DONE AND EXECUTED at Tallahassee, Florida, this 17th day of January, 1977, A. D.

Reubin O'D Askew
Governor

Secretary of State

Attorney General

Comptroller

Bill Gunter
Treasurer

Commissioner of Agriculture

Commissioner of Education

ATTEST:

Secretary

As and Constituting the Head of the State of Florida Department of Natural Resources.

State Of Florida

RESOLUTION

WHEREAS, the Governor and Cabinet, sitting as head of the Department of Natural Resources, on December 16 and 17, 1976, considered extensive testimony concerning the economic justification and environmental effects of the Cross Florida Barge Canal; and

WHEREAS, by resolution adopted January 17, 1977, the Governor and Cabinet recommended against completion of the Cross Florida Barge Canal Project and requested the United States Congress to deauthorize this Project; and

WHEREAS, the Florida Legislature in 1979 adopted Chapter 79-167, Laws of Florida, which provided for the orderly disposition of Canal lands and facilities upon deauthorization of the Cross Florida Barge Canal Project by the United States Congress; and

WHEREAS, Chapter 79-167, Laws of Florida, provides for refunds to counties contributing ad valorem tax dollars to the Cross Florida Barge Canal Project, plus interest from the date of such contributions, and interest assessments thereunder continue to accrue against Canal assets; and

WHEREAS, litigation has been filed seeking reversion of Canal lands to former landowners which in some instances has been successful; and

WHEREAS, S. 1131 and H.R. 2695 have been filed in the United States Congress and Congress has under consideration the deauthorization of the Cross Florida Barge Canal Project.

NOW THEREFORE BE IT RESOLVED THAT:

The Governor and Cabinet of the State of Florida, recognizing the authority of the United States Congress to require completion of the Canal, respectfully:

1. Recommend against completion of the Cross Florida Barge Canal Project.

2. Request the United States Congress to deauthorize the Cross Florida Barge Canal Project.

3. Recommend the United States Congress appropriate sufficient funds to purchase Canal lands located in the Oklawaha River Valley and included in the extended boundary of the Ocala National Forest as specified in Section 253.781, Florida Statutes.

DONE AND EXECUTED at Tallahassee, Florida, this the 3d day of August, 1983, A.D.

Bob Graham
Governor

George Firestone
Secretary of State

Jim Smith
Attorney General

Gerald Lewis
Comptroller

Bill Gunter
Treasurer

Doyle Conner
Commissioner of Agriculture

Ralph D. Turlington
Commissioner of Education

OHIO WATER RESOURCE PROJECTS

STATEMENT OF OHIO DEPARTMENT OF NATURAL RESOURCES

Mr. Chairman and members of the subcommittee, this testimony is given in support of funding in FY '86 for two specific projects and one survey investigation proposed by the Corps of Engineers in the State of Ohio. Currently, there is no funding included in the President's budget for these proposals.

Maumee Bay State Park Shore Protection Project

The Maumee Bay Shore Protection project is recommended by the Corps of Engineers to help arrest serious erosion along the park's Lake Erie shoreline. The park is located just east of Toledo. An $11.9 million project is proposed and will consist of a protective sand beach stabilized by rubblemound, offshore breakwaters along the west half of the park shoreline. The proposed project also includes a rubblemound revetment 6,200 feet long at the east end of the park. Also, three area ditches would be protected by rubblemound protective works.

On December 5, 1983 the Corps' Board of Engineers for Rivers and Harbors recommended favorable action on the report of the Buffalo District Engineer for the shore protection project at Maumee Bay State Park. This Subcommittee included in its report on the FY '85 Budget a recommendation that $200,000 be appropriated to allow the Corps to initiate preconstruction planning under the category of Continued Planning and Engineering (CP&E). However, the Reagan Administration has thus far refused to release the appropriated funds due to certain policy considerations.

On January 24, 1985, representatives from the Ohio Department of Natural Resources, members of the Ohio General Assembly, and Ohio congressional representatives met with the Acting Assistant Secretary of the Army for Civil Works in an attempt to have the funding released. Although a final decision has not been reached by the Administration, our representatives remain confident that an equitable arrangement can be effected that will result in the release of the appropriated funds. This would allow the Corps to move forward with the preconstruction planning.

It is estimated that $500,000 will be required to enable the Corps to complete preconstruction planning for the Maumee Bay State Park Shore Protection project. Therefore, since $200,000 has already been appropriated in FY '85, we now look to this subcommittee, in its deliberations over the FY '86 Budget, to provide the remaining $300,000.

Construction of the Maumee Bay State Park Shore Protection project is absolutely essential in order to allow the Ohio Department of Natural Resources to move forward with our development of Maumee Bay State Park. The Department has already invested over $6 million in the park and we are currently underway with plans to invest an additional $25 million. When completed, the park will feature a full recreational development complex, including: a lodge, cabins, golf course and all necessary support facilities.

I want to emphasize that the Ohio Department of Natural Resources is not looking for a federal "handout." We are looking for an expression of commitment, a commitment to help ensure the Corps participation in a joint erosion protection project. Funding for the State's share of the $11.9 million erosion protection project has already been appropriated by the Ohio General Assembly and we are totally prepared to meet the necessary non-federal obligations.

We urge this subcommittee to honor our request and appropriate $300,000 to allow for completion of the preconstruction planning for the Maumee Bay State Park Shore Protection project.

Geneva-on-the-Lake Harbor

The proposed Geneva-on-the-Lake Harbor Development project is to be constructed at Geneva State Park. The park is located along the south shore

of Lake Erie about 17 miles east of Fairport Harbor and 12 miles west of Ashtabula Harbor.

From FY '77 thru FY '84, the Corps of Engineers expended almost $1 million for post authorization planning on this project. However, funding to complete plans and specifications and to initiate construction has not been provided.

The Geneva-on-the-Lake Harbor Development project was also discussed during the January 24, 1985 meetings that were held in Washington with the Acting Assistant Secretary of the Army for Civil Works. The Assistant Secretary was advised that the Ohio General Assembly has appropriated the non-federal share of the project funding to the Ohio Department of Natural Resources. The Secretary was further advised that $1 million dollars had been offered to the Corps in "up-front" financing in order to move the project forward. However, policy considerations similar to those associated with the Maumee Bay Shore Protection project have delayed further action on the project.

In anticipation of a favorable resolution of the cost sharing problem with the Administration, it is necessary to look ahead to the funding requirements of the project. In addition, should the Reagan Administration be successful in its attempt to close the Coast Guard Station at Ashtabula, the necessity of providing a harbor-of-refuge at Geneva State Park will be particularly acute.

Therefore, we urge the subcommittee to give favorable consideration towards including $1 million in the FY '86 Budget for the Geneva-on-the-Lake Harbor Development project.

Ohio River Waterfront Development Study

On August 8, 1984, the House Public Works and Transportation Committee approved a resolution to authorize the Corps of Engineers to perform a comprehensive study of the needs and opportunities for enhancing the urban waterfront areas of communities along the Ohio River. (A copy of this resolution is enclosed) When completed, the many communities along the river will look to the results of the Corps' study to provide guidance, planning assistance, and positive direction in enhancing their respective Ohio River waterfront areas.

The proposed Ohio River Waterfront Development Study is supported by each member of the Ohio Congressional Delegation whose district touches on the Ohio River. The study is also supported by many local officials of Ohio riverfront communities.

It is strongly recommended that $300,000 be added to the Corps of Engineers FY '86 Budget to initiate this extremely important effort.

I appreciate the opportunity to provide this testimony in support of additional funding for the Corps of Engineers Civil Works Program in Ohio for FY '86.

R E S O L U T I O N

Ohio River Between River Miles 40 and 491
Docket No. 2255

Resolved by the Committee on Public Works and Transportation of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors is hereby requested to review the report of the Chief of Engineers on the Ohio River, published as House Document Numbered 306, 74th Congress, 1st Session; House Committee on Flood Control Document Numbered 1, 75th Congress, 1st Session; and other pertinent reports, with a view to determining whether any modification in the present comprehensive plan for flood control and other purposes in the Ohio River Basin is advisable at this time, with particular emphasis on the Ohio shoreline areas on that portion of the Ohio River between River Miles 40 and 491. Such review shall include, but not be limited to, consideration of the needs and opportunities for enhancing the urban waterfront areas of communities along the Ohio River. Special consideration shall be given to improvements in the interest of general recreation; fishing; boating; fish and wildlife enhancement; aesthetic quality; preservation and interpretation of archaeological, historical, and cultural resources; and other measures that will provide for enhancement of environmental and economic resources development and use and enjoyment of urban riverine areas by present and future generations. Plans shall be prepared in close cooperation with appropriate local, state, and other Federal agencies and shall be compatible with more comprehensive development plans formulated by those agencies.

Adopted: August 8, 1984

ATTEST: James J. Howard
JAMES J. HOWARD, Chairman

(Requested by Representative Bob McEwen)

VIRGINIA BEACH, VA., PROJECTS

STATEMENT OF CITY OF VIRGINIA BEACH, VA.

Mr. Chairman, members of the Committee -- Thank you for giving me the opportunity to appear here this morning as a proponent of Virginia Beach projects.

I am here to request that you retain construction funds in the F.Y. 86 budget for a project known as Virginia Beach Streams, Canal Number Two, Virginia. This is an urgently needed flood control project which has been recommended as a new start in the Administration's budget for the last three years; however, in each of the last three years the Congress has failed to appropriate the funds recommended by the Administration.

This project will pass any review based on merit and need. The sole purpose of this project is to provide flood control within the densely developed portion of the Canal Number Two watershed. Development presently subject to flooding includes approximately 3,000 homes. A 980 acre industrial park containing commercial and light industrial spaces is presently under development in the Canal Number Two watershed. The industrial park, including the Lynnhaven Mall shopping complex, drains into a temporary ditch excavated by the city along the proposed alignment of Canal Number Two. Plans were recently unveiled for another shopping center immediately adjacent to Lynnhaven Mall which will transform the area into the largest concentration of retail shopping in the Hampton Roads SMA. None of this development was even planned when this project was originally justified and authorized. Without Canal Number Two the potential for flooding increases daily.

Basically this project involves improvements to an existing land cut for a length of 2.6 miles and an existing channel for a length of 1.1 miles. It will drain an area of 37 square miles.

So urgent is the need for this project that the City of Virginia Beach has constructed a temporary ditch along the proposed canal alignment as an interim stopgap measure while waiting for the necessary construction funding from Congress. However, this existing ditch is limited in its capacity and has earthen plugs at each end thereby negating any significant flood control value. The plugs cannot be removed except with construction of the federal project and its attendant mitigation measures as required by the federal environmental review agencies. In the meantime, the ditch acts as a stormwater detention system for the industrial park.

If construction of the temporary ditch by the city does not convince you of the seriousness and urgency with which we view this matter, please consider the following action which the city has also taken in an effort to expedite the construction of the federal project:

- Right-of-way acquisition as required for the federal project is essentially complete.

- Construction plans and specifications for the International Parkway highway bridge crossing of the canal are complete.

- The Virginia Beach City Council has passed a resolution which prohibits the use of the canal right-of-way for anything other than construction and maintenance of the federal project.

- The city has agreed to every cost sharing proposal advanced by the corps.

Congress has considered this project important enough to authorize it and to appropriate the necessary advanced engineering and design funds to allow the Norfolk district to complete all construction plans and specifications. They were completed in 1982. The corps has also obtained all of the necessary federal and state environmental approvals. Once the necessary legal agreement between the corps and the city is signed, the project will be ready to advertise for bids.

Allow me to summarize the present dilemma faced by the City of Virginia Beach vis-a-vis the Canal Number Two Project. We are faced with rapidly expanding development in a watershed that was prone to flooding even before much of that development occured. (The genesis of the present project was a request to Congress from what was then Princess Anne County in 1946 to provide relief to farmers whose fields were subject to flooding.) We have the choice of either stopping any further development which, if legally enforcable, is contrary to the American ethic of work and free enterprise and would tend to dampen the economy; or we could build the canal with our own resources which we will eventually have to do if Congressional funding does not materialize soon. In view of the investment of time and money in this project over the last 39 years, it seems reasonable to expect the Congress to honor what has certainly become an implied commitment during that time.

I earnestly request that funds in the amount of 1.0 million dollars for Canal Number Two be retained in the budget for F.Y. 86 so that construction of this urgently needed flood control project may proceed.

For the record of this Committee, I would like to mention three other water resources projects which are pending in Virginia Beach.

1. I fully expect the Rudee Inlet Navigation Project to be authorized in the near future by the Secretary of the Army under Section 107 of the 1960 River and Harbor Act. Rudee Inlet provides a safe harbor with direct access to the Atlantic Ocean for about 300 commercial and recreational boats. In addition to these, another 16,250 boats are launched annually from the ramps on Lake Rudee. I cannot overemphasize the importance of this project to the economy of our city. Rudee Inlet should be before your Committee for funding at an early date.

2. The Phase I design memorandum for a project for hurricane-flood protection at Virginia Beach has been completed and is being reviewed by the Governor of Virginia and by the cooperating Federal agencies. The Chief of Engineers report, together with supporting documents, should be forwarded to the Congress for final authorization in early summer. It appears that authorization may not be forthcoming at an early date. Accordingly, I request that funds for continuation of Planning and Engineering be included in the F.Y. 86 budget so that detailed design of the project may continue while the project awaits authorization.

3. In 1976 the City of Virginia Beach was forced to perform emergency remedial work at the Long Creek Canal to correct design deficiencies in the original project constructed by the Corps of Engineers as a part of the navigation project for Lynnhaven Inlet, Bay and Connecting Waters. Specifically, the design deficienies resulted in severe erosion at the base of the bridge piers on a heavily used north-south traffic artery in the city. The corps did not have sufficient funds or authority to provide this emergency remedial work in a timely manner. The city is attempting to recover the $1,660,000 it was forced to spend for this remedial work from the Federal Government.

This concludes my presentation. Thank you Mr. Chairman.

Bassett Creek Watershed, Minesota

Statement of Citizens of Hennepin County, Minn.

The citizens of the Cities of Crystal, Golden Valley, Medicine Lake, Minnetonka, Minneapolis, New Hope, Plymouth, Robbinsdale, and St. Louis Park in Hennepin County, Minnesota need financial assistance from the Congress of the United States to construct the Bassett Creek Flood Control Project. The construction of this project will solve a problem which has plagued these communities for approximately 60 years and will be the culmination of a planning and engineering effort which over the last 20 years has involved many of the citizens of the watershed and many local, state and federal governmental representatives. The nine local communities have assisted the Corps of Engineers in the project planning and selection process, have purchased some of the right-of-way necessary for the project, have constructed portions of the project which could not be delayed, and have agreed to a recent proposed increase in their contribution to the cost of the project. The nine communities in the watershed have assumed this leadership role in the planning and construction of the project because they want Congress to realize that the people in the Bassett Creek watershed want the project to be completed and that the project is urgently needed.

Need for Project

The Bassett Creek watershed is located in eastern Hennepin County, Minnesota and contains lands in nine communities. The western edge of the watershed is in the City of Plymouth. The waters flow easterly into Medicine Lake and through the City of Medicine Lake. Bassett Creek leaves the lake and flows easterly through the Cities of Golden Valley and Minneapolis, emptying into the Mississsippi River just north of downtown Minneapolis upstream of St. Anthony Falls. The South Fork of Bassett Creek drains part of the City of St. Louis Park, while other drainage enters the Main Stem from the City of Minnetonka. A North Fork drains parts of the Cities of New Hope, Crystal and Robbinsdale.

Throughout most of the watershed, the creek channel is an aesthetically pleasing winding stream which enhances residential development and recreational areas. The last 1½ miles of the creek, however, is in a long conduit, parts of which were constructed nearly 100 years ago. The conduit passes under an industrial and commercial area, and in some cases directly under buildings before it outlets into the Mississippi River. The conduit has long been in a state of disrepair; collapse is possible any time, especially under load from a large runoff event. In the event of such collapse, extensive damage to property and possible loss of life would occur.

Structural replacement of the tunnel will not alone preclude future flooding problems in Minneapolis and other cities along the creek. Floodplain zoning ordinances are in effect in all the cities and a plan has been prepared including other methods of flood damage reduction, both non-structural and structural.

It is this plan which is before you now for assistance in funding.

History of the Project

A Bassett Creek flood control project has been a concern of the communities in the watershed in the last 60 years. The Corps of Engineers was first authorized by Congress to study the problem in 1962. Both the downstream cities which bear the brunt of the flood damage and the upstream cities whose development contributes so conspicuously to the problem, are in agreement that a project is required. Based on this concensus, the Bassett Creek Flood Control Commission (now Bassett Creek Water Management Commission) was

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organized in 1969. It is a joint powers arrangement among the nine communities in the watershed. Since its inception, the Commission has been working to find a cost-effective means to provide flood control.

It was soon realized that the communities could not, by themselves, afford an effective project and assistance was requested from the U.S. Army Corps of Engineers which was authorized by Congress in 1970. Since then, the Commission has worked with the Corps to develop a plan for flood control that would preserve the amenities provided by the creek and protect the environment. Such a plan was developed, hearings were held, and the project was approved by the nine communities, the public at large, and the St. Paul District office of the Corps of Engineers. The Congress authorized the project in the Water Resource Development Act of 1976.

However, approval of the project did not carry with it appropriations for construction funds. When President Carter took office, he expressed concern with all the water projects being planned and constructed in the United States. As a result of his policy, a hold was placed on all such projects.

In the summer of 1977, hearings were conducted in Minneapolis by representatives of the Department of Interior and by Mr. Elliott Cutler, Assistant Administrator of the Office of Management and Budget. In our presentation at the hearings, we stressed the need for speed in undertaking our project because of an immediate opportunity to combine a new Bassett Creek tunnel, which was part of our project, with an interstate highway (I-94) drainage tunnel to be built under Minneapolis in approximately the same place. At that time, we estimated that by taking advantage of this opportunity, we could reduce the cost of our project from $20 million to $10 million. Mr. Cutler was sympathetic to our point of view and to the possible savings in public monies, but was unable to sway the President on his return to Washington. We managed to take advantage of the opportunity anyway, through the concerted efforts of several parties - the Minnesota Department of Transportation, the Federal Highway Administration, the City of Minneapolis, the Corps of Engineers, and the Commission. Basically, it was agreed that if and when the Congress appropriated money for the project, the Minnesota Department of Transportation would be repaid for our share of the tunnel with federal funds in the amount of $4,054,000. That tunnel is now complete and operable, but more work has to be done to connect Bassett Creek to the tunnel. Now another opportunity has presented itself to connect the creek to the completed tunnel. Another highway project, the Third Avenue distributor portion of Interstate 394, will run into Minneapolis from the west and its drainage will tie into the tunnel completed earlier. Again, we can save the public money if we combine Bassett Creek with the highway drainage in a single tunnel. We would like to work out arrangements similar to those that allowed us to complete the earlier portion of the tunnel. We may, however, be frustrated by our inability to get our project funded even to the extent of repaying our previous debt.

As previously mentioned, there are also other parts of the Corps approved plan. The nine member communities have taken it upon themselves to advance the funds and complete some of the work. We believe that in this connection, we are the first group in the country to enter into a Section 215 agreement with the Corps of Engineers. The 1979 agreement between the Corps of Engineers and the City of Golden Valley provides for the communities to be reimbursed for the federal share of the cost of the project when funds are appropriated for construction by Congress. The Section 215 work was completed in 1983.

The Communities have also agreed to local participation in the cost of the project in an amount far higher than was originally anticipated. In the past, federally supported water resource projects have been constructed with a local contribution which averaged approximately 15 percent. We have been asked

by the Department of Defense, Civil Works, to contribute 35 percent of the project cost as a local share. Mayor Donald Fraser of Minneapolis has made such a commitment in writing on our behalf. We understand that this matter is currently in dispute between the administration and Congress; it would, of course, be our desire that a lower percentage be required as our share of the project cost as part of any law that is enacted.

The St. Paul District, Corps of Engineers has continued to receive planning money over the years for the Bassett Creek project. That funding is now exhausted. The critical need now is to move from the planning and design stage to the construction stage.

Affect of Further Delay on the Project

We are concerned that the Congress understand the importance of this project and the support it has received from the public. It has been included in the President's budget in each of the past three years on the advice of the Chief of Engineers and of the Congressional representatives from Minnesota. It is supported by all the local communities and by their citizens. We wish to stress the following points:

1. The downstream portion of Bassett Creek currently runs in an aged conduit under Minneapolis. The Minnesota Department of Transportation oversized an interstate highway drainage tunnel to enable us to replace part of the old conduit. This oversized tunnel was constructed with the understanding that future federal funding would be available to cover the cost of oversizing. THIS TUNNEL IS IN PLACE AND IS READY TO ACCEPT WATER FROM BASSETT CREEK ONCE THE PROPOSED CONNECTION IS BUILT.

2. There is an opportunity now to build this connection. Another segment of interstate highway known as the Third Avenue distributor is being built from the west into Minneapolis and will have to be drained into the previously completed tunnel. WE CAN COMBINE BASSETT CREEK WITH THIS HIGHWAY DRAINAGE AGAIN AT A CONSIDERABLE SAVINGS IN PUBLIC MONIES, IF WE ARE PREPARED TO ACT BY THE SPRING OR SUMMER OF 1986. After that, contracts for highway construction will have to be let and we will be unable to participate.

3. Failure to fund and start construction of this project in 1986-87 will result in the Corps of Engineers being unable to complete their planning and design. The Corps had expended $1,625,000 on project planning through September 30, 1983. They have been involved in the design work on the connection between the creek and the previously constructed tunnel which would receive drainage from the Third Avenue distributor and from Bassett Creek and on the design of upstream project features. THAT IMPORTANT DESIGN WORK HAS NOW COME TO A HALT.

4. The conduit which now carries Bassett Creek under Minneapolis is in a state of total disrepair and is subject to collapse at any time, particularly as a result of a large flood or an unusual runoff event. A 100-YEAR FREQUENCY FLOOD AND CONDUIT COLLAPSE AT THE SAME TIME WOULD CAUSE DAMAGES OF OVER $26 MILLION WITHIN THE CITY OF MINNEAPOLIS. Many industrial buildings are constructed over the creek contributing to the potential for a major catastrophy.

5. The Corps of Engineers has estimated that FOR EACH YEAR THE PROJECT IS DELAYED, $3,173,000 IN PROJECT BENEFITS ARE LOST.

6. The Federal Government has a responsibility to the nine cities in the Bassett Creek watershed who have proceeded under a Section 215 agreement with the Corps of Engineers. The communities have con-

structed substantial portions of the project, advancing monies required to construct the federal share as well as their own, and the Corps has completed design of portions of the project. Where else in the United States have local communities shown the interest and willingness to fund a federally supported project? In addition, the local communities have already acquired more than 700 acres of land as part of their responsibility to provide the rights-of-way required for the project. THIS PROJECT HAS PASSED ALL THE TESTS AND MEETS ALL THE POLICIES AND STANDARDS REQUIRED FOR CONSTRUCTION OF A NEW WATER PROJECT. IT IS SUPPORTED BY THE PRESIDENT AND THE CORPS OF ENGINEERS AND WAS PREVIOUSLY APPROVED BY THE SENATE APPROPRIATIONS COMMITTEE. TO THE BEST OF OUR KNOWLEDGE, THERE IS NO KNOWN OPPOSITION.

Conclusions

In conclusion, it is apparent to everyone who has worked on this Bassett Creek flood control project that it is needed, it has been well planned, it is universally supported by the public, and it is really only a step away from being realized. It is especially important to act now because there is an opportunity to construct the remaining connection between the creek and the completed tunnel that will eventually carry the creek under the City of Minneapolis at a substantial benefit to all taxpayers. If there is no water bill in 1986, the Bassett Creek Water Management Commission will be required to investigate other methods of carrying the creek through the City of Minneapolis, probably at considerable increases in cost to the public and at a risk of severe flood damage in Minneapolis. Furthermore, there is an outstanding federal obligation to reimburse the nine communities for their expenditures as part of the Section 215 agreement and the Minnesota Department of Transportation for the cost of oversizing the drainage tunnel for Interstate 94 to carry Bassett Creek under Minneapolis.

The delays in the appropriation of construction funds along with drastic increases in construction and acquisition costs has seriously impacted the communities' ability to pay for their share of the project. We originally expected to be responsible for approximately 10% of the cost of a project whose estimated cost was somewhat over $10 million. The delay has nearly tripled the estimated project cost. In addition, we have been forced to commit ourselves to 35 percent of the cost as a local share. Prompt support of the project will at least help slow the escalation of construction costs. We also hope that something less than 35 percent local contribution will be required in the final law.

It is our sincere hope, since the President has recommended the project as one that has met all study requirements and since the project has been approved by the Chief of Engineers, that the Congress will support it in the 1986 appropriations.

We thank you for the opportunity to inform you of our problem and we will appreciate your assistance and the cooperation of the Federal Government.

ENERGY RESEARCH AND DEVELOPMENT PROGRAMS

STATEMENT OF AMERICAN COLLEGE OF NUCLEAR PHYSICIANS AND SOCIETY OF NUCLEAR MEDICINE

Mr. Chairman, members of the Subcommittee, the American College of Nuclear Physicians (College) and the Society of Nuclear Medicine (Society) are pleased to offer the following statement regarding the Fiscal Year 1986 budget for the Department of Energy. Both organizations strongly support the need for continued funding of Nuclear Medicine research through the Department of Energy's Nuclear Medicine Applications Program.

The College is a professional organization representing more than 1,200 physicians and scientists actively engaged in the practice of Nuclear Medicine. The Society of Nuclear Medicine is a scientific organization of 10,000 members including physicians, physicists, chemists, radiopharmacists, technologists, and other professionals engaged in the medical use of radioactive materials. The combined membership of these two organizstions constitutes the Nuclear Medicine community of this country.

The College and Society are fully cognizant of the severe budget constraints that the Congress, and your Subcommittee, must work under in addressing FY 86 budget needs. However, it has been our experience that in the field of Nuclear Medicine the applications of basic research activities lead to extraordinary health benefits and cost savings for the American public. Past research resulting from DOE's Nuclear Medicine Applications Program, designed to enhance the application of both radioactive and stable isotopes, has produced benefits which we will outline.

WHAT IS NUCLEAR MEDICINE TODAY?

In a typical Nuclear Medicine procedure, the imaging study, a very small amount of a radioactive preparation is administered by injection. This tracer may be designed specifically to concentrate in one body organ, or to be metabolized or removed from the body by a particular route. Some radioactive drugs are designed to concentrate only in abnormal tissue such as cancer cells or compromised heart muscle. Sophisticated instrumentation records the transit and images the distribution of the radioactive preparation in the body. Data derived from the examination may also be processed by computer, producing improved images and quantitative information about organ function. Organ systems, even specific clusters of cells, routinely examined in this fashion include brain, lungs, liver, kidneys, bone, thyroid, pancreas, heart, and major blood vessels.

If the study indicates that no abnormality is present, the patient can be reassured, possibly even discharged from the hospital, and the physician can turn his attention elsewhere. If the study identifies a disease process, then the physician can proceed to the next phase of diagnosis or treatment. It should be emphasized that Nuclear Medicine diagnostic procedures are safe and painless for the patient.

Diagnostic in vitro examinations encompass certain tests in which no radioactive material is administered to the patient. Instead, a sample of some body fluid, usually blood, is collected from the patient and reacted with a radioactive reagent in a test tube. These tests are used to determine the presence of hepatitis, pregnancy, and cancer antigens, to determine the precise concentration of various hormones, vitamins and drugs, and to identify pollutants or other toxic materials in the environment. Radioimmunoassay techniques permit early discovery of tumors and matastases before they become evident clinically.

Approximately 120 million Nuclear Medicine procedures are performed each year in hospitals and outpatient facilities -- on the average two on every patient admitted.

HOW EFFECTIVE ARE NUCLEAR MEDICINE PROCEDURES?

The College and Society believe that Nuclear Medicine procedures, by improving and streamlining the diagnostic process, (1) reduce total health care expense, hospitalization time, and patient suffering by rapidly directing patient treatment and (2) provide in many areas more useful information about the patient's problems than that available from other diagnostic modalities, many of which are more costly. Because Nuclear Medicine procedures can be used to study rapidly changing body processes, as in heart and kidney, they tell us how the body functions, as opposed to other imaging procedures such as radiography which reveal only anatomic information. With the advent of the new Medicare Prospective Payment System and other emerging cost containment methods, the cost effectiveness of most medical procedures will be carefully scrutinized. We are confident that Nuclear Medicine will fare well under this scrutiny.

Nuclear Medicine techniques are especially versatile for basic research in the chemical, biological, and physical sciences. Since techniques are similar, data in these areas are easily expanded into clinical research allowing rapid application of information from the research laboratory to clinical practice. The following are a few of many such applications, demonstrating the importance of a continuing high level of research:

(A) Cardiac Nuclear Imaging

One of the most dramatic examples of the rapid transfer of research developments to the hospital is the noninvasive study of the human heart. Heart attacks kill approximately 700,000 people annually and are the leading cause of death in the United States. Almost 300,000 individuals suffer their first heart attack without prior knowledge of having significant coronary disease. Early identification of persons at risk had heretofore been particularly difficult. Nuclear diagnostic techniques developed and applied within the past four years are significantly more sensitive and less risky in identifying individuals with diseased coronary arteries (hence at risk) than are other diagnostic methods such as electrocardiographic stress testing, and much less expensive and hazardous than coronary arteriography. Positron emission tomography, developed in large part by DOE laboratories, is the only method of measuring the metabolic activity of heart muscle in a non-invasive manner.

These newly developed nuclear diagnostic methods are being applied with increasing frequency in outpatient facilities where men and women in certain high risk categories can be screened for heart disease. Such techniques are also being used to assess the extent of damage after heart attacks have occurred. Marked reduction in costs is accomplished by screening patients with these procedures on an outpatient basis, reserving the expense of hospitalization and cardiac catheterization for those patients whose findings indicate the need for further studies. Great savings result when patients requiring continued hospitalization can be identified and safely transferred out of the costly intensive care units to lower level care areas.

(B) Cancer Patient Evaluation

The major emphasis of Nuclear Medicine in the field of cancer has moved from the therapeutic use of radioactive materials to the use of improved imaging modalities which permit earlier detection and better staging of cancers. In addition, there is growing use of Nuclear Medicine in monitoring the therapy of cancer and early discovery of recurrent or disseminated cancer. This information allows the clinician to continue or modify treatment accordingly. Among the most serious problems in cancer chemotherapy are the serious side effects that anticancer drugs produce. Such effects can often be more efficiently monitored through the use of Nuclear Medicine procedures. For example, certain cancer drugs can adversely affect the heart muscle. Nuclear Medicine methods provide a guide to therapy whereby this toxicity and the possibility of drug induced heart failure can be avoided.

Despite this progress, present technology cannot pinpoint very small growths and often cannot determine their nature. Therefore, these techniques need to be improved by development of more specific radioactive drugs, by exploration of more sophisticated immunologic and biochemical methodology, and by development of instruments with better spatial resolution (such as that offered by emission tomographic techniques). Research with radiolabeled monoclonal antibodies as well as development of compounds that accumulate specifically in receptors only contained in breast tumors are examples of a promising new approach that is being pursued.

(C) Patient Treatment

1. Treatment of Cancer

Improvements in cancer therapy have come about by the development of improved radiotherapy beams, better localization of the tumor, computer-aided treatment planning, and new chemotherapy agents and regimens. Further benefits derived from the use of charged heavy particles (protons, alpha particles, and mesons) arise from better dose distributions, and impressive advantages have been demonstrated in the treatment of benign and malignant growths in the brain. Reduced morbidity and mortality and decreased cost to the patient are achieved from these procedures. The facilities needed for these treatments are only present at DOE National Laboratories and major research centers. Additional support is needed to develop specialized low cost accelerators dedicated for medical purposes.

2. Heavy Ion Therapy

Heavy ions are being used at the Lawrence Berkeley Laboratory for the treatment of blood vessel malformation in the brain. Approximately 10,000 Americans per year are found to have this condition which is not readily treatable surgically. These patients benefit from this new mode of treatment which has been developed with DOE support in the last two years. This program also has proceeded to the treatment of other tumors, with major new successes in the treatment of tumors of the eye and spinal cord.

3. Labeled Monoclonal Antibodies

Labeled monoclonal antibodies offer the promise for the treatment of certain cancers using the specificity of the antibodies to the tumor as a way of localizing the dose. These studies in many instances are provided through collaboration between National Laboratories (Lawrence Berkeley Laboratory, Brookhaven, Los Alamos, Oak Ridge), and Universities (George Washington University, Washington University in St. Louis, University of California at Davis, University of Kentucky, and others).

(D) Instrumentation Development

Important new knowledge of brain function in health and disease has been obtained by the use of positron emission tomography (PET) imaging. PET systems have improved in performance significantly, but the ability to resolve small structures discretely is much less than what is possible and cost is still too high for all but a few research centers. Further improvements in instrumentation are needed to characterize small structures of importance. Developments in high energy physics instrumentation need to be adapted to medical applications to achieve optimal resolution and diminished cost. A five-fold decrease in cost seems realistically achievable with a two-to-three-fold improvement in resolution, given funding for instrumentation support for medical applications at the National Laboratories.

Since PET technology requires an on-site cyclotron and is expensive, the potential of single photon emission tomography (SPECT) is being widely explored. If perfected, this technology would be readily available widely without much additional expense, since the basic

instruments are already present in most Nuclear Medicine departments. Research for instrument modification and SPECT radiopharmaceutical development is heavily dependent on DOE support.

(E) Pediatric Nuclear Medicine

Further examples of the improvement in health care from research and development in Nuclear Medicine techniques are in the area of pediatric medicine. A Nuclear Medicine bone scan is the most effective technique for the early differentiation of bone infection from soft-tissue infection, disorders that are clinically similar, but markedly different in treatment and outcome. A Nuclear Medicine liver excretion study is the only method short of exploratory surgery to differentiate blocked bile ducts from liver inflammation in jaundiced newborn infants, who tolerate surgery very poorly.

There has been much recent research emphasis on the production and diagnostic use of short-lived radionuclides. An example is the cooperative effort between Oak Ridge National Laboratory in Tennessee and Children's Hospital in Boston, which was initiated to produce an Osmium-191/Iridium-191m generator. Osmium-191, with a half-life of 15.4 days, produces Iridium-191m, which has a half-life of 4.96 seconds. This short-lived isotope permits repeated determination of cardiac function with exercise or administration of drugs, particularly important in pediatrics because children change for better or worse much faster than adults, making speed in diagnosis critical. Isotopes with short half-lives deliver much lower radiation doses to patients.

(F) Aging and Atherosclerosis

Nuclear Medicine provides noninvasive methods of studying changes of brain metabolism during normal aging. Of significance are the initial results of DOE supported research on Alzheimer's disease. A group of collaborating investigators supported in the main by the Department of Energy's high technology program on nuclear instrumentation and the National Institutes of Health have discovered an extremely vital piece of information with regard to Alzheimer's disease. A pattern of decreased glucose metabolism occurs in specific areas of the brain in patients with this disease. These patterns are distinctive, particularly when compared to the patterns seen in normal aged matched individuals as well as individuals with other forms of dementia. If these observations are confirmed, it may be possible, for the first time, to identify patients with Alzheimer's disease. Precise diagnosis of a disease must be possible before effective treatment can be developed.

In addition, through investigations of the distribution of chemicals involved in neural transmission, Nuclear Medicine studies have provided for the first time a tool for understanding whether there are changes in neural transmission associated with aging.

Atherosclerosis research has benefitted in two major areas. It is now possible using Nuclear Medicine advances in positron emission tomography and single photon tomography to evaluate the efficacy of methods of treatment for stroke and heart attacks. These advances come from developments in instrumentation physics provided through the unique capabilities of the National Labs and from new radiopharmaceuticals. For example, at present, Brookhaven National Laboratory produces the purest form of the tracer Iodine-123 for use in synthesizing compounds to study stroke. The major, and for practical purposes, only source of Strontium-82 which is needed for protection of Rubidium-82 used in imaging blood flow of the heart muscle is at Los Alamos National Laboratory. A super high resolution positron emission tomograph which will provide the capabilities for the time to evaluate metabolic activity in small regions of the brain and heart is being studied by the Department of Energy at Lawrence Berkeley Donner Laboratory.

(G) Mental Disorders

One of the major contributions made through collaborative work between National Labs and Universities, e.g., New York University, Cornell, and Brookhaven, is the investigation of the metabolic patterns of the brain in schizophrenia. This is still an area of great controversy; however, for the first time in centuries, there appears to be a quantitative tool whereby this disorder can be studied in a systematic fashion using noninvasive techniques. Work is also being carried out on studying various receptor systems such as the dopamine and morphine receptors which are involved in a variety of mental disorders.

The facilities and skills at the DOE supported National Laboratories are of prime importance for the development of these procedures and for their dissemination to the user community in medical centers throughout the country.

SUMMARY OF PROMISING AREAS OF RESEARCH

a) Expanded radioisotope production efforts: to provide new radioactive materials from accelerators as well as to increase the supply of current radionuclides for radiopharmaceutical development and clinical feasibility studies.

b) Radiopharmaceutical research: to improve understanding of drug distribution and mechanisms of drug action; to increase the specificity of tracer uptake by studying new uptake mechanisms; to measure the effects on biodistribution caused by particular chemical groups; to identify and characterize drug interactions; to address problems related to biological effects of environmental pollutants; to achieve reductions in patient radiation dose by developing radiolabeled drugs having more desirable properties.

c) Stable (non-radioactive) isotope tracer development: to expand the spectrum of metabolically active substances labeled with enriched stable isotopes of carbon, oxygen, and nitrogen; to study a wider variety of clinical applications of stable tracer technology.

d) Nuclear Medicine instrumentation: to improve design and efficiency of detectors; to continue development of emission and single photon emission tomography, nuclear magnetic resonance analysis, and computer-assisted diagnosis.

SPECIAL CONCERNS

The College and Society do request the Committee to consider three specific areas of concern regarding the Nuclear Medicine Applications portion of Biological and Environmental Research program:

First, during the past several fiscal years, there has been an inadequate percentage of the Nuclear Medicine Application budget allocated for capital equipment needs. In comparably high technology research areas such as high and medium energy physics and nuclear chemistry, the normal percentage of capital equipment funds to operating funds is in the range of 10-20 percent. Nuclear Medicine research requires equipment and instrumentation of similar cost and sophistication; however, during the past several fiscal years, the percentage allocated for capital equipment in Nuclear Medicine research has been in the range of four percent of operating costs. The consequence of these past allocations is the present need for upgrading of equipment for the basic DOE Nuclear Medicine research program in all of the laboratory facilities.

This problem is not amenable to a one-time remedy, particularly in view of current budget constraints, but instead will require several years of attention. Therefore, we urge the Committee to consider appropriate means for assisting DOE in the identification of past

deficiencies and future needs in this vitally important area. We feel this should include a policy that will provide adequate funding for capital equipment for the Nuclear Medicine research program, with an annual increase of at least 20 percent.

Second, there is a problem associated with the stable isotope production program that concerns us. Oak Ridge National Laboratory (ORNL) is the sole domestic source of certain stable isotopes necessary for the production of radioisotopes used in medical research, diagnosis and treatment. For example, ORNL separates and distributes stable Thallium-203 for production of Thallium-201 in heart studies and stable Tellurium-124 for production of Iodine-123, a short-lived isotope which reduces patient radiation dose and markedly improves image quality as compared with other isotopes of Iodine. Under the existing budget, only two of the four banks of separators at ORNL can be operated. Serious consideration must be given to providing sufficient funds to permit the operation of all four separators so that present needs can be met, depleted inventories reestablished, and the increasing number of research and industrial cyclotrons supplied by these separators allowed to keep pace with increasing demand from the medical community. The products of these separations are also essential to important basic research in the non-medical sciences of physics, chemistry, and geology.

Third, while we fully understand the basis for incorporation of the Nuclear Medicine Applications and Live Science Research budgets into the significantly larger Biological and Environmental Research budget category, we respectfully request that the Committee clearly identify separately that portion of the Biological and and Environmental Research appropriation to be devoted to the Nuclear Medicine Applications Program.

We sincerely thank the Subcommittee for the opportunity to submit this testimony, and are prepared to answer any questions that may arise.

WITNESS LIST

Panel 1 - Review of the Nuclear Medicine Program

Henry Wagner, Director
Division of Nuclear Medicine
Johns Hopkins Medical Institution
Member: Health and Environment
Research Advisory Committee
Office of Energy Research
Department of Energy

Panel 2 - Medical Applications of Nuclear Technology

Dr. T. F. Budinger
Lawrence Berkeley Laboratory
University of California

accompanied by

Mrs. Quereda Berry, Patient
Treated by Heavy Ion Therapy

Panel 3 - The Future of Nuclear Medicine

Dr. David Kuhl
Department of Radiological Sciences
University of California Medical Center

Alfred P. Wolf, Chairman
Chemistry Department
Brookhaven National Laboratory

STATEMENT - ADVANCES IN RADIOTRACERS: DEPARTMENT OF ENERGY AND NUCLEAR MEDICINE PROGRAM

Alfred P. Wolf, Chemistry Department, Brookhaven National Laboratory

Introduction

Biomedical research with radioactive tracers has a long and distinguished history in seeking solutions to problems of human health and disease. Out of these and other research efforts have evolved the specialty known as Nuclear Medicine. Nuclear Medicine is the most inter- and multidisciplinary area of the medical subspecialties today. Its practice and continuing progress involves chemists, physicists, biologists, engineers, computer specialists, physicians and many others who design and build its sophisticated tools and create its new biochemical and functional probes.

The underlying theme of this constant evolvement of labeled radiotracers and radiopharmaceuticals is the role that the Department of Energy has played at every stage. This support began with AEC, continued under ERDA and now is a mission of DOE.

The focus of these governmental agencies and offices throughout almost 40 years has been the support of basic research in tracer development as well as biomedical research that depends in considerable measure upon complex and developing technologies at National Laboratories and University Centers. From the many examples of successful radiotracers, technetium-99m and thallium-201 stand out as milestones both having been developed as a result of support of research and development in National Laboratories. Technetium-99m is the label for more than 75% of the radiopharmaceuticals used in clinical practice today and thallium-201, is widely used for probing cardiac function.

But, history is not the primary theme today. What is more important is the present and the future, where do we stand today in the preparation, study and application of radiolabeled compounds for Nuclear Medicine practice and investigation, what problems remain to be solved, and what do we expect to evolve.

Accelerators as Sources of Radiotracers

Cyclotrons, the original source of radiotracers in biomedical research, were superceded by nuclear reactors post WW-II. Reactors provided greatly expanded productive capacity albeit of a restricted class of radiotracers. Reactor technology today, is a mature field, at least insofar as radiotracer production is concerned. Today accelerators, especially small medical cyclotrons (Fig. 1) are once again becoming primary tools for new radionuclide production. Indeed these machines are now in a renaissance of rapid development and their commercial availability in our view forms the basis for effecting the new and exciting strategies for the diagnosis and treatment of disease using short-lived radionuclides. The accelerator and associated technologies constitute the tools needed to produce the radionuclides which form the basis for today's thrust in nuclear medicine. The development and application of this high technology continues to be a hallmark of DOE efforts.

Radiotracers and Radiopharmaceuticals: Emphasis on Short-Lived Radioisotopes

There are two areas of intense interest and research which involve radioactive isotopes in biology and medicine. These relate to positron emitter labeled radiotracers for basic research in biology and medicine (with clinical applications beginning to emerge) and radiopharmaceuticals for diagnostic application in clinical nuclear medicine. Here the accomplishments resulting from DOE's longstanding commitment to innovation in the development of high technology and in basic research in radionuclide development have resulted in the introduction of safer, more efficacious diagnostic radiopharmaceuticals into health care practice throughout the world.

Perhaps the most significant new development is research and application using positron emitters. This can be attributed to their unique role in probing human physiology and pathophysiology and the technological advances, which are occuring that make them part and parcel of the armamentarium of diagnosing and treating human disease.

While the major emphasis in this report is on positron emitter labeled tracers, it should be noted that these are not the sole new directions new radiotracers are taking. In the area of diagnostic radiopharmaceuticals mention must be made of new generator systems such as the $^{82}Sr/^{82}Rb$ generator and the $^{191}Os/^{191m}Ir$ generator. Rubidium-82 is a positron emitting radionuclide useful in precise localization and quantitation. The latter daughter isotope, i.e. iridium-191m is of such short half-life (5 seconds) and radiation characteristics that it can be safely used repeatedly in evaluating cardiomyopathies in infants as well as children and adults. Yet another area of research and development is the use of high energy accelerators to prepare large quantities of potentially useful radionuclides such as the strontium-82 previously mentioned as well as iodine-123 and other radioisotopes which the nuclear medicine community wishes to develop as new clinical tools. Fundamental research into the chemistry of diagnostically useful isotopes such as ^{99m}Tc and ^{123}I continues to lay the groundwork for preparing new compounds to extend the diagnostic utility of these isotopes. Such investigations have elucidated the structures of commonly used ^{99m}Tc labeled diagnostic agents possibly leading to the correlation of structure with biological properties. Similarly, highly selective compounds labeled with ^{123}I, an isotope having ideal decay properties for routine clinical measurement and a half-life which is convenient for distribution, have been developed through extensive chemical research. The development of new ^{99m}Tc and ^{123}I labeled diagnostic radiopharmaceuticals for heart and brain are a goal here.

The thrust of the remainder of this report is to focus on current developments in research with the positron emitters and the future outlook for radiopharmaceuticals and radiotracers in medical practice.

Radiotracers for Basic Research in Biology and Medicine: Application

Through the use of the short-lived β^+-emitting isotopes of carbon-11, nitrogen-13, oxygen-15 and fluorine-18 it is now possible to study one of the fundamental characteristics of living tissue, its metabolic processes. Tissue metabolizes a variety of substances. For example, the heart muscle meets its demands for pumping blood primarily by oxidizing fatty acids. The brain burns mostly glucose. When a region of a heart muscle is deprived of oxygen, the synthesis of lipids ensues and the metabolism of carbohydrates increases. The positron emitters are ideally suited to the investigation of these and other metabolic processes in the living human body because unlike the major clinically used diagnostic radionuclides (such as technetium-99m, gallium-67, indium-111, iodine-131, thallium-201), carbon-11, nitrogen-13 and oxygen-15 are radioactive isotopes of the organic molecules of life and therefore their substitution for their stable counterparts in chemical compounds results in no significant perturbation of the biological properties of the parent molecule. This is also true, in many cases, for the positron emitter fluorine-18. As a result, an almost limitless number of positron emitter labeled metabolic substrates as well as labeled drugs and other biochemical probes can be synthesized. Combined with the fact that these all have short half-lives, one is dealing with materials resulting in low or negligible doses to human subjects, and no radioactive waste disposal problem is created.

Through developments over the past two decades in the cyclotron production of the positron emitters, in their rapid incorporation into a wide spectrum of metabolically significant radiotracers, in the development of Positron Emission Tomography (PET) for detecting these radiotracers and in tracer kinetic modeling which allows a quantitative description of biochemical processes in vivo, it has become possible to measure the metabolism of the various substances in normal and in diseased tissue. This strategy has

become a powerful probe with which to study the molecular bases of disease, to assist in the diagnosis and prognosis of a patient's condition and to keep score on the success of a particular treatment regimen. In order to track these substances chemists have recently succeeded in labeling fatty acids, glucose analogs, amino acids, polyamines - and many other substances - with positron-emitting nuclides so that the biological fates of these tissue nutrients used as tracers for the natural material and drugs which affect and control body biochemistry and can be regionally and temporally tracked by PET.

Because the PET method is harmless and essentially non-invasive - humans (rather than laboratory animals) become the model for their own diseases. Positron-emitting labeled tracers have become the keys to the molecular chemistry of living cells. Furthermore, the probing of cellular function, for example the activity of presynaptic and postsynaptic neurons in the brain, with neuroleptics and other drugs is leading to new information on the functioning of the human brain. With these strategies, the many kinds of metabolism and response to drugs become the probes for research and diagnosis.

Presently, positron emitting radiotracers which probe metabolism and blood flow in normal and disease states of the brain and heart form the basis for the majority of medical investigations using PET. To cite one specific example, 2-deoxy-2[^{18}F]fluoro-D-glucose (^{18}FDG) which was developed nearly a decade ago by teams involving a collaboration between Brookhaven National Laboratory, the University of Pennsylvania and the National Institutes of Health forms one of the cornerstones of the research and clinical programs in positron emission tomography today. Other tracers which are commonly used in PET research are [^{11}C]-2-deoxy-D-glucose (^{11}CDG), [^{11}C]palmitic acid, and ^{15}O-labeled tracers. By choosing from a menu of radiotracers such as these, more than one aspect of metabolism in a man or animal can be examined. For example, by using oxygen-15 water, oxygen-15 gas and ^{11}CDG as tracers, one can measure regional blood flow oxygen uptake and glucose metabolism in the brain. Armed with these three measures of metabolism, the relationship between the amounts of glucose and oxygen consumed in light of the adequacy of substrate and oxygen supplies can then be appraised and tissue viability in diseases such as stroke can be determined. Similar strategies have also been employed to assess the degree of damage and to predict the success of cardiac bypass surgery after myocardial infarction. Treatment of hydrocephalus is yet another area materially aided by the knowledge gained from PET studies.

One area of particularly intense activity is the use of PET to study major psychotic illnesses such as schizophrenia, a disease which afflicts roughly 1% of the population and primarily targets adolescents and young adults. Even though dramatic improvement in treating schizophrenia began in 1954 with the introduction of the drug chlorpromazine, an understanding of the biology of the disease and how the behavior-modifying drugs work as yet eludes researchers. Through PET studies with a tracer of sugar metabolism, ^{18}FDG, several research groups have shown that significant pattern differences exist between normal subjects and schizophrenics, a so-called disease-related hypofrontality. For the first time we can relate a measurable physiological marker to a behavioral disorder. Other diseases where the measurement of regional brain glucose metabolism have shed light on the locus of metabolic abnormality are senile dementia Alzheimer's type, focal epilepsy, and Huntington's disease.

The future goals in PET research will focus primarily on cardiovascular disease, cancer, stroke, the psychotic illnesses and on Alzheimer's disease. Some insight into the character of the research can be illustrated by some new methods which are just developing. For example, as a result of progress in the cyclotron production of positron emitters and the rapid syntheses of more highly selective tracers, such as [^{11}C]N-methylspiperone and [^{18}F]N-methylspiperone and [^{11}C] and [^{18}F]-DOPA, PET is now being used to probe the the biochemical characteristics of specific neurotransmitter receptor sites in the brain. It is known that most of the behavior modifying

drugs which provide effective treatment for schizophrenia also affect the dopamine receptors, and the hope is that PET can measure the ways the radiolabeled tracers are bound to these sites in the brains of normal and schizophrenic subjects, and in other diseases where dopamine receptor abnormalities may play a role.

In another example of the use of PET to examine an increasing number of biochemical systems, putrescine, a polyamine and a naturally-occurring metabolic substrate involved in rapid neoplastic growth such as is observed in certain kinds of tumors, has been labelled with carbon-11 in order to study brain tumors with positron tomography. The first PET measurements of already diagnosed tumors in the brains of two patients show that ^{11}C-putrescine (or its labeled metabolites), is concentrated in the neoplasm and not in its surrounding tissue. In one study, one can see the rapidly growing center of a large astrocytoma. The slower growing portion has taken up less tracer and there is a region in which no putrescine seemed to be sequestered. When the tracer for glucose ^{11}CDG was administered to measure the same subject's regional cerebral glucose metabolic rate, the resulting PET images once again showed the tumor nucleus, the slower-metabolizing cortex and even the presumably necrotic region. The almost one-to-one correspondence between the putrescine image of tissue proliferation and the regional glucose metabolic rate patterns revealed a clearer picture of how that particular tumor was growing than did a set of CT scans which only revealed its peripheral structure. Here it appears that this new tracer, in combination with the already-established ones, will help the oncologist to distinguish among brain tumor types, their stage of malignancy and their responses to therapy.

Although we have cited only a few examples of new directions in research with the positron emitters, this is by no means the whole story. For example, tracers such as the amino acids, [^{11}C]-methionine and [^{11}C]leucine have been labeled in order to study protein synthesis in the brain. Other neurotransmitter receptors such as the opiate receptor, the benzodiazepine receptor, and muscarinic receptors are now amenable to study through labeling of ligands which bind selectively to them. In addition to [^{11}C]putrescine which was described earlier, other molecules involved in tissue proliferation (such as nucleosides and nucleotides) have been labeled with ^{11}C and ^{18}F and studies are underway to probe DNA and RNA synthesis in tumors using these metabolic substrates. In yet another example labeled inhibitors of enzymes such as monoamine oxidase (which is important in neurotransmitter regulation) have been labeled with carbon-11 and show promise as indicators for functional enzyme activity in brain. It should be noted here that whenever tracers of high organ or tumor specificity are identified, the same drug targeting mechanisms can then be exploited for designing a radiotracer for therapy by labeling with a radioisotope whose decay selectively destroys malignant tissue in a highly confined volume element thereby sparing normal tissue. One such example is the alpha-emitter astatine-211 attached to monoclonal antibodies and of possible application in ovarian cancer.

The Future

Cyclotrons: The renewed interest in cyclotrons, primarily their use in PET centers has stimulated cyclotron manufacturers to produce machines of increasingly economical and simple operation. Indeed, machines are beginning to appear which are completely computer controlled and can be technician operated. A remarkable reflection of this growing interest in cyclotrons is the stability of price if not actual reduction in price. Again because of the interest in the positron emitters, attention is being directed towards other types of accelerators such as proton linacs utilizing electrostatic focussing. The advantage here would be reduced space requirements, less complex shielding requirements in a production facility, and potentially decreased cost. Yet another machine of the future may be a superconducting cyclotron where greatly enhanced capability and reduced size and possibly cost may compete effectively with "conventional" machines available now and in the next several years.

The basic research and development work leading to these new directions continues to come in large measure from government supported research primarily from the Department of Energy. It must be stressed that inexpensive and simple to use accelerators are the key to facile positron emitter production.

Production Techniques: Traditionally, the production of radiolabeled compounds has been a labor-intensive effort. Each step of the procedure demands care and speed to insure that a pure, effective, and active product evolves. One of the reasons that positron-emitter labeled compounds have been slow to enter the mainstream of clinical practice and biological research is just because of the need for a high level team of professionals to create production-quantities of high quality radiotracers and radiopharmaceuticals.

Borrowing from the already established disciplines of automatic process control and modern instrumentation, we, and several other laboratories have begun to replace the human with a microprocessor to aid in producing radiolabeled compounds (Fig. 3 and 4). Design work is proceeding using microprocessors to address each step in a procedure from bombarding the target to produce the radionuclide to final quality control of the product. The microprocessors carry out, individually and in concert, an adaptive control and monitoring as they produce the compound. Computer-microprocessor control will make the efficacious radiotracers available to a wider variety of users because of the greatly reduced need for a professional production team. An equally important aspect is greatly improved radiation hazard control during preparation since the intervention by humans is largely circumvented.

The introduction of robots similar in concept to those now used on automotive production lines should be a next step in the development of cyclotron use. Such robots could be designed to quickly replace dangerous cyclotron components when that becomes necessary and completely eliminate the need for humans to deal with active targets.

The building blocks necessary to prepare the radiopharmaceuticals and allow its facile transfer to the user are presently under study. Many of the techniques for totally integrated systems exist. The needed development and engineering work to effect this concept remains to be done. It should, however, be clear that a distinction exists between the black box approach for radiopharmaceuticals which become part and parcel of medical practice and the need for continued biomedical research and new technical development.

Radiopharmaceuticals and Labeled Tracers: The future for radiopharmaceuticals and radiotracers is rapidly expanding in terms of the medical issues which are being addressed and their introduction into health care practice. For example, sophisticated short-lived generator systems will develop to the point where their use in community hospitals will be routine and the benefit to risk/ratio associated with diagnostic procedures, even in sensitive populations, will increase. Industry is already supplying fully automated generators such as the $^{82}Sr/^{82}Rb$ generator which is used to measure myocardial perfusion. The strontium-82 isotope developed at a national laboratory, is being supplied to industry in bulk. In the near future, one can predict that more selective compounds of ^{99m}Tc and ^{123}I will extend the utility of these isotopes to the diagnosis of brain and heart pathologies and of tumors at medical institutions where access to positron emitting compounds is not possible. New knowledge of radiopharmaceutial targeting such as the use of labeled monoclonal antibodies will be applied to the therapeutic destruction of lesions.

Positron Emission Tomography (PET) to measure the regional distribution of a radiolabeled tracer has already proven itself to be a unique and powerful probe of biological processes within living and intact organ systems. Furthermore, to date the rapid synthesis of several hundred tracers has been developed and the number of new synthetic strategies is rapidly increasing. New methods for the cyclotron production of the positron emitters in large

quantities (such as ^{18}O-water targets for ^{18}F production, Fig. 2) are being actively developed. It is noteworthy that in 1976 only four centers where a cyclotron, PET and laboratories dedicated to the development of positron emitter labeled radiotracers existed in the world, while today there are at least sixty completed and developing institutions world-wide. By 1988 another twenty institutions will have these facilities.

The future for the positron emitter labeled tracers depends not only on continual development of new synthetic and isotope production methods but also on extending their use to medical institutions which do not have access to the cyclotron and chemistry laboratories and core team of scientists required to prepare the tracers. To accomplish medical access to the positron emitters, two solutions are evolving. One involves automation of the complex tasks of running a cyclotron and routinely synthesizing radiotracers which was described earlier. Indeed, this has been acomplished for a number of widely used radiotracers such as 2-deoxy-2[^{18}F]fluoro-D-glucose (^{18}FDG) (Fig. 3 and 4). Such systems are housed in shielded synthesis cells (Fig. 5). Some of the cyclotron manufacturers also sell the automatic synthesis systems as accessories to the accelerator. While this is a positive step, much remains to be done.

A second approach to the question of how a biomedical research institution can employ the tool of positron emitting tracers and quantitative imaging without maintaining a staff of chemists, physicists and engineers is found in the concept of the Regional Cyclotron-PET Center.

Regional Cyclotron-PET Center: Clinical and research institutions who lack automated medical cyclotrons and radiotracer synthesis systems can still employ radiotracers for patient care and clinical investigation. To meet their demands, we propose that such institutions can receive the tracer compounds manufactured in a nearby regional Cyclotron-PET Center (Fig. 6). Even though the half-lives of the radionuclides fluorine-18 and carbon-11 are short, if enough activity is produced initially, there will still remain useful doses even after having been transported many miles from the cyclotron by ground or air delivery. Initial analyses estimate that one such Center could serve a region of 2-million population. Delivery of a positron-emitting radiotracer is not a new idea. Since 1976, BNL has shipped ^{18}FDG by air to the NIH, the University of Pennsylvania and to Massachusetts General Hospital for use in their PET brain studies.

This Cyclotron-PET Center may also supply its region with services in addition to the delivery of short half-life radiopharmaceuticals. For example, tracer studies involving very rapidly-decaying radiotracer such as oxygen-15, could be carried out using a PET located at the Center rather than at the medical institution, the patients being transported instead of the tracer. Computers at the Center would also supply clinicians in the region with quantitative images whose formats were uniform. Taking advantage of this service, a physician would be able to study all kinds of medical images in one sitting at a graphics work station in his department or the analysis of images could be performed by the Center staff.

Conclusion

The future is indeed bright for these new labeled tracers and radiopharmaceuticals. They are completely unique in being able to probe regional biochemistry and physiology in normal and pathophysiological states. Thus an understanding of the underlying physiology of the normal and disease states leads to new modes of diagnosis with these radioactive probes and to the directions treatment should take. The knowledge gained with the use of these tracers can even lead to the therapeutic applications of radionuclides.

We have presented an overview of the Department of Energy-supported Nuclear Medicine Program as it has related to radiolabeled tracers and radiopharmaceuticals, with a special emphasis on the promises these compounds hold for tomorrow. The tools and methodologies that have evolved from this Program will most likely be the implements through which the very processes of many diseases can finally be conquered.

NUCLEAR MEDICINE TECHNOLOGY AND APPLICATIONS TO DISEASE THERAPY

Testimony given to Congress by Thomas F. Budinger, Lawrence Berkeley Laboratory, University of California, Berkeley

University of California in San Francisco, on 20 March 1985

D.O.E. support for technological developments and applications of nuclear medicine can be placed in four categories: imaging the distribution of radioactive isotopes, application of radioisotope technology to in vitro studies for diagnosis of disease, injection of radioactive isotopes for therapy, and development of accelerators both for the production of radioactive isotopes and for the use of specialized heavy ion beams from these accelerators for the treatment of disease.

My presentation will focus particular emphasis on uses of D.O.E. sponsored nuclear medicine programs for either guiding therapy or actually delivering therapy. The relative merits of nuclear magnetic resonance (NMR) and new nuclear medicine instrument technologies such as positron emission tomography (PET) will also be cited when relevant to different topics of the presentation.

Aspects of the benefits of imaging for diagnosis and the present and future technologies which relate to isotope production are being presented today by other members of this panel.

The philosophy which we have at the Lawrence Berkeley Laboratory and the University of California is that we have a responsibility for application of new technology to the study of disease mechanisms as well as the responsibility for guiding the transfer of this technology into the practical day-to-day clinical medicine if appropriate. A few examples of this transfer will also be given.

Shown in the first fig.are some important disease entities toward which nuclear medicine is making significant therapeutic impacts.

Stroke

For example, in stroke, nuclear medicine techniques are now being

used to evaluate patients for appropriateness of by-pass surgery. The quantitative and high resolution capabilities of positron tomography (PET) allow us to judge the efficacy of this form of therapy as illustrated in the patient study of Figure 2.

A second example is the evaluation of the sickle cell patient who might be at high risk for stroke. These patients can be benefited by aggressive therapy (e.g., frequent transfusions), if very small strokes that do not result in symptoms, but can be demonstrated by PET, are shown to be the warning signs of impending stroke in very young patients. The degree to which high resolution PET can make these diagnoses which lead to life-saving procedures in a disease that effects two in one-thousand black Americans is dependent on the detector instrumentation. Figure 3 shows the expected evolution of instrumentation improvements which are required for evaluation of the metabolism and flow in human cortex. A simulation of a blood clot in the human thalamus and a small portion of the cortex is shown on the right. Both of these pathological problems could occur in a patient without easily recognized signs by the untrained observer. With present instrumentation, the diagnosis of these serious signs of abnormal blockage of arteries to brain regions cannot be made--the defects must be very much larger as shown by the illustration on the left which is typical of present technology. Through D.O.E. sponsored research at National Laboratories and Universities (e.g., University of California, Berkeley, University of California, Los Angeles, Harvard, University of Pennsylvania) the detector instrumentation can be significantly improved through technological advances shown in Figure 4. The cost for this research at each of the major institutions is between $1 and $2 millions per year. The reason we strive for a 2 mm resolution is that this resolution will allow us to accurately evaluate metabolism in the gray matter of the brain whose thickness is in a range of 4-6 mm (please note: an instrument resolution one-half that of the organ structure is

required for quantitation). Once sufficient accuracy can be provided by instruments which do not blur the activity, then wide spread applications and acceptance by practicing physicians is predicted.

A third example of the importance of nuclear medicine is in coronary artery disease which leads to heart attacks. In this area the nuclear medicine approach is both with positron tomography and more conventional nuclear medicine imaging which Professor Wagner has shown provides early detection, and a method for evaluating the efficacy of therapy. Figure 5 shows a method of evaluating flow to the heart muscle using PET, but instead of a cyclotron for production of the radioisotope, a portable generator system is employed. This generator supplies rubidium in a convenient fashion and thus makes possible the practical use of PET for heart studies of this type without a cyclotron. There are other generators which can facilitate PET as a practical tool for large medical centers and these generator systems were developed initially at the National Laboratories and are now being evaluated for commercial dissemination. The importance of these instruments is that they provide a method of answering questions with regard to the efficacy of dietary changes, emotional and mental stress conditioning, physical conditioning, medical drug therapy, and surgical by-pass surgery.

The actual onset of coronary artery disease probably occurs many years before the defects shown in Figure 5 can be demonstrated. Here is an example of how nuclear magnetic resonance can be used to study the physical chemistry and anatomy of the arterial walls, at least of the human aorta, as shown in Figure 6. On the other hand, nuclear magnetic resonance at present does not have the sensitivity to provide the spatial resolution of flow and metabolism abnormalities which are revealed by PET or emission tomography by using single photon radiotracers.

Cancer

Cancer of course is another focus of nuclear medicine wherein disease detection can be done equally well by x-ray computed tomography

and nuclear magnetic resonance (NMR). Nuclear medicine, in fact, due to its limited resolution, is less able to detect small tumors than these other modalities. However, here we have another example between nuclear medicine techniques or x-ray techniques. The latter techniques have superb anatomical definition for the sensitive detection of pathological defects; however the nuclear medicine techniques provide a specificity which is not available to either NMR or x-ray method. This specificity is based on the introduction of monoclonal antibodies whose use for in vitro studies is now being widely accepted; however, in vivo monoclonal antibody tumor detection procedures are still in the research stage. Therapy of cancer by monoclonal antibodies involves research which is now very strongly a part of D.O.E. programs.

Of particular relevance to the D.O.E. high technology impact on cancer therapy is the use of heavy ion beams of radiation from accelerators. These beams have the characteristic of precise radiation dose localization. Improved local control of cancer is believed to be achieved if higher radiation dose can be given to the tumor while simultaneously sparing the adjacent normal tissue. Failures in local control are believed to account for about 100,000 deaths annually in the United States. Using heavy particle beams from accelerators presently being perfected at D.O.E. sponsored facilities, we can achieve this localization. Historically, the first effective use of these heavy ion beams resulted in successful treatment of over 800 patients with pituitary disease by Dr. J. H. Lawrence using proton and helium ion beams at Berkeley since the mid-50's. This treatment is now being provided for routine medical therapy at accelerators at Harvard, Uppsala, Sweden, and sites in Russia.

Another group of cancers for which heavy ion therapy has proved to be particularly effective are those of the eye, brain, and spinal cord. Many of these cannot be successfully treated by conventional radiotherapy and surgery because of the proximity of the cancer to very

sensitive neurologial structures. After discussing the use of these beams for exploring the cause of dementia, such as Alzheimer's disease, we will present to this committee a new use of the heavy ion beams for the treatment of arterial-venous malformations in the brain.

Dementia and Mental Illness

Dementia and mental illnesses will be discussed by Professor David Kuhl on this panel in more detail, but I thought it would be important to use Alzheimer's disease as a example of how D.O.E. sponsored research has led to an understanding of the pattern of defect in brain metabolism which is shown in Figure 7. Of course, having the ability to definitely diagnose a demented patient as having Alzheimer's disease helps the patient and the medical community only to the extent that this patient is properly diagnose and does not have to undergo further procedures. But having this diagnosis or this capability for diagnosis leads naturally to the question: "So what do we do now?" As Professor Kuhl might emphasize, dementia of the Alzheimer's type is considered in the same class/$\frac{as}{an}$ alarming epidemic. This can be seen by Figure 8 wherein U.S. Bureau of Census figures have been plotted to project the severity of this illness which is believed to account for half of the nursing home occupancy.

D.O.E. sponsored research is involved in three areas of research on this disease. First, through studies of the brain metabolism and blood flow we endeavor to understand the cause of the disease. Secondly, in parallel,we can use nuclear medicine techniques to study the efficacy of various suggested modes of therapy as shown in Figure 9. The three modes of attack on this problem shown here might have three or more drugs proposed leading to nine possible modes of treatment. Our analysis of this problem is that we need a sensitive technique to learn which drugs, if any, can be used to reverse or stabilize the progression of the disease in a way analogous to the use of digitalis for heart disease or dopamine for Parkinson's disease. A third approach is to

combine the heavy ion beams with nuclear medicine detection techniques in creating a model of Alzheimer's disease as suggested by the speculations of Figure10 wherein we propose to gently eliminate small regions of the brain which we believe might be responsible for the onset of this disease. This is meant to illustrate what one might designate as high risk, high technology research. It is this kind of approach that is frequently necessary to explore a problem which has been known since 1906, but whose cause seems to be as remote from our understanding now as it was then.

Example of the Successful Use of Heavy Ion Beams for the Treatment of Arterial-Venous Malformation

The connections between arteries and veins are abnormally made due to congenital defects in many otherwise normal appearing people. More than 10,000 new arterial-venous malformation patients are discovered each year. Of these, 2,500 are not accessible surgically without great risk to the patient. Using heavy ion beams,over 100 radiosurgical procedures have been successfully completed in the past few years at by a helium ion beam at the Lawrence Berkeley Laboratory and a proton beam at Harvard. An example of the beneficial results in this life-threatening medical problem is presented to the committee by an actual case. Ms. Quereda Berry had a surgically dangerous arterial venous malformation which was diagnosed in late 1983 after she became concerned about partial paralysis and small seizures in the left side of her face and numbness in the left arm and leg. The x-ray computed tomographic study showed a very serious vascular abnormality in the right frontal lobe of the brain which is demonstrated in Figure 11. The upper left shows a large malformation being fed by one of the main arteries of the brain. The same malformation is shown from a different view on the upper right. In neither case can we see that the anterior cerebral artery is receiving blood flow. These studies were done in January, 1984. Thereafter, she received stereotactic radiosurgery at the

Lawrence Berkeley Laboratory and one year later, in February, 1985, the angiograms showed that the arterial-venous malformation was obliterated. Of great importance, also, is the fact that the normal cerebral blood flow was restored. The next figure shows how important the precision of therapy is relative to the position of the malformation. Demonstrated in Figure 12, left, is the region of the AV malformation. In the center is a lateral view of the position of the oblitrating beam and on the right is a frontal view showing the targetry for the heavy ion beam. The response to the heavy ion beam therapy requires a few months. Ms. Quereda Berry has agreed to be present at these hearings to attest to this mode of therapy.

Summary

Some major medical science problems whose solutions can be approached using the technologies available through D.O.E. sponsored research are shown in Figure 13. To this list one could add many other areas and some of these will be discussed by other members of the panel. Clearly, the instrumentation technology for detection and production of radioactive tracers of human physiology has evolved from D.O.E. research programs. The future for improving the resolution by a factor of 4 is bright and the investigators presently equipped to succeed in this work are presently supported by D.O.E. The future for practical, low cost or readily accessible accelerators for isotope production and patient treatment is also bright. Even in the area of nuclear magnetic resonance, D.O.E. has been the leader in stable isotopes such as carbon-13, and a lead resource for the superconductivity technology necessary for achieving very high fields in very large magnets. Improved instrumentation in both areas is necessary if we are serious about answering the questions posed in Fig. 13.

Acknowledgments

The illustrations presented in this testimony are from work underway at the Lawrence Berkeley Laboratory and the University of California at San Francisco and Berkeley. The patient study and therapy was provided by Drs J. Fabrikant and E. Alpen. The Alzheimer's work is from collaboration with Dr. R. Friedland and the stroke work is from collaborations with Dr. P. Weinstein and Dr. S. Embury.

NUCLEAR MEDICINE IMAGING
for
ASSISTING THERAPY

FIG. 1

CEREBRAL VASCULAR DISEASE - **STROKE**
Bypass surgery decisions.

SICKLE CELL DISEASE - **CRISIS**
Decision on therapy.

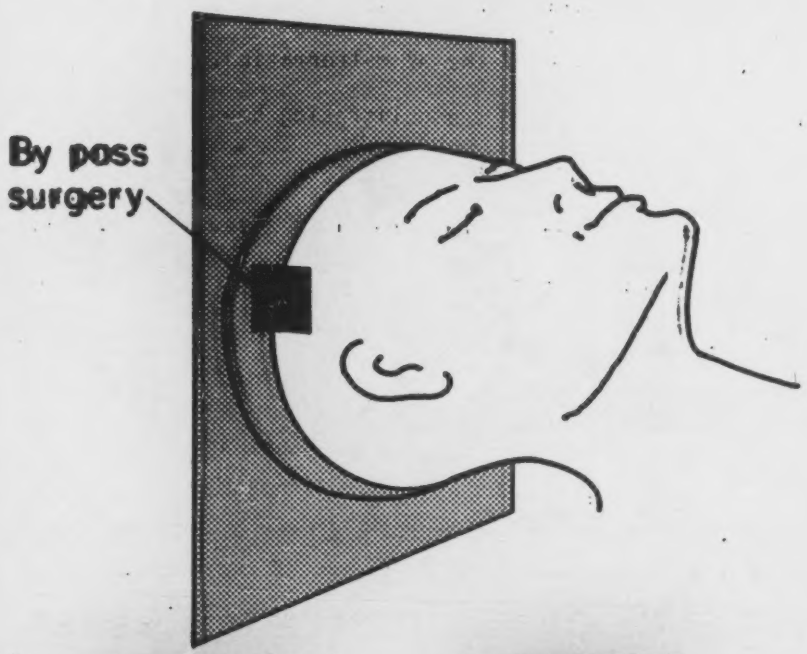
CORONARY ARTERY DISEASE - **HEART ATTACKS**
Detection and efficacy of therapy.

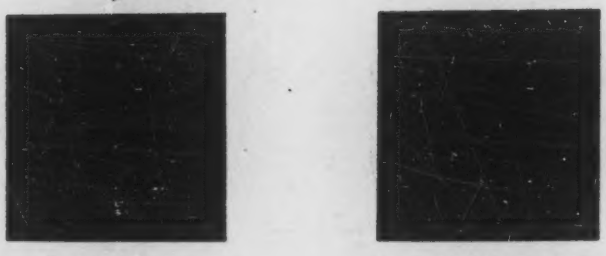
ABNORMAL GROWTH - **CANCER**
Detection and efficacy of therapy.

DEMENTIA AND MENTAL DISEASE - **ALZHEIMER'S**
Decision on diagnosis -
Where do we go from here?

FIG. 2

MONITORING EFFICACY OF CEREBRAL VASCULAR SURGERY BY MEASURING BRAIN GLUCOSE METABOLISM



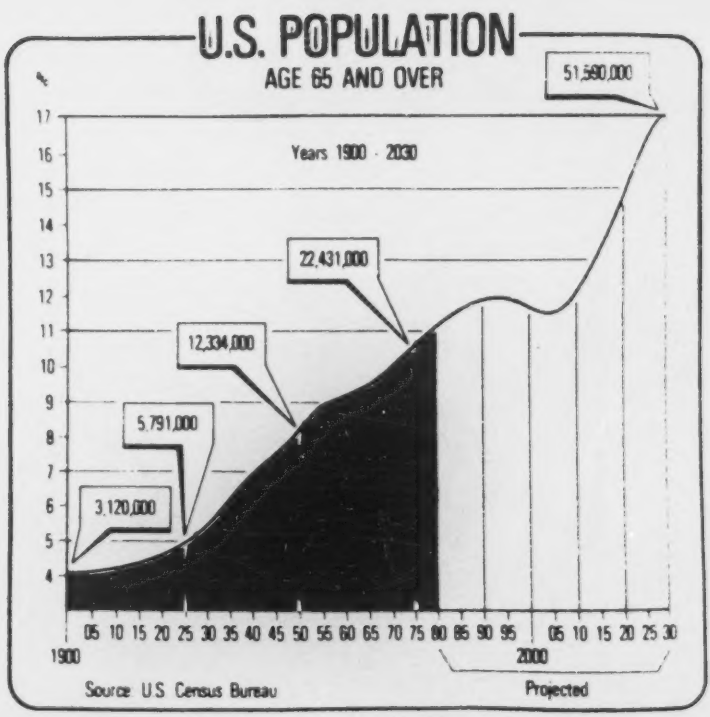


Before Aftter

PET Images

Weinstein/Budinger
Donner Laboratory
UC Berkeley &
UC San Francisco

FIG. 8



PREVALENCE OF ALZHEIMER'S DISEASE

6% — 65 y.o. to 80 y.o.

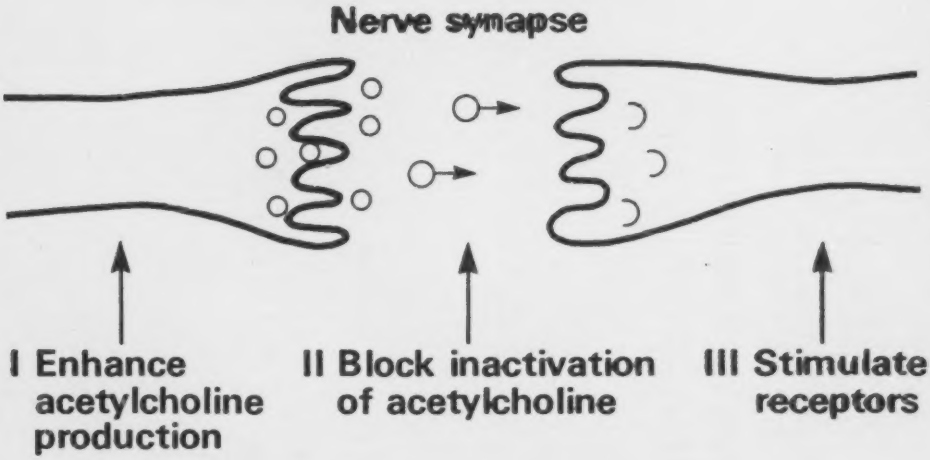
20% — 80 y.o. and older

50% of patients in nursing homes.

FIG. 9

PROPOSED TREATMENTS

Three modes directed toward known cholinergic deficiency



HIGH TECHNOLOGY NEEDS

Practical methods for evaluation of drug efficacy

- Positron Tomography of improved resolution
- Single photon Tomography
- NMR in vivo spectroscopy

FIG. 10

PROPOSED RESEARCH

NUCLEUS BASALIS INFLUENCE ON FLOW AND METABOLISM

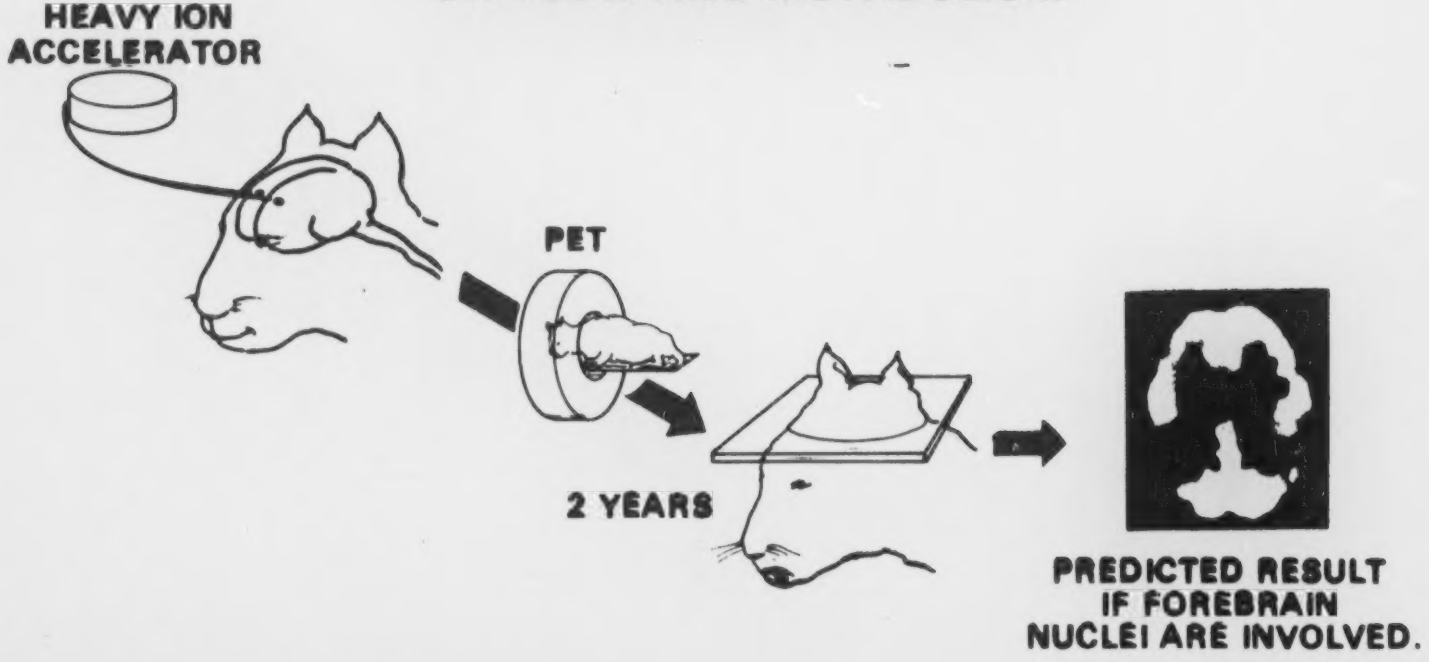


FIG. 13

MEDICAL SCIENCE OBJECTIVES FOR HIGH TECHNOLOGY

ATHEROSCLEROSIS	• Do the fatty streaks in arteries of children become the atherosclerosis of adulthood ?
	• What are the lipid metabolic patterns of atherosclerosis ?
MENTAL DISORDERS	• What are the biochemical bases of schizophrenia and behavior disorders ?
AGING	• What is the cause of Alzheimer's disease ?
RADIATION	• What is the biophysical mechanism leading to radiation necrosis ?
	• What are the long-term effects of the radiation environment in space ?

TOPIC: NUCLEAR MEDICINE PROGRAM OF DEPARTMENT OF ENERGY: BRAIN IMAGING RESEARCH

Prepared by: David E. Kuhl, M.D.
Professor of Radiological Sciences
UCLA School of Medicine and Laboratory of Biomedical and Environmental Sciences
Los Angeles, California 90024

Mr. Chairman, Members of the Committee, I appreciate the opportunity to appear before you to discuss the Nuclear Medicine program of the Department of Energy.

Over the past several decades, this Nuclear Medicine program has provided benefits to the general public far out of proportion to its supporting funds. One reason for this success has been a willingness to support and encourage multidisciplinary efforts focused to providing the technical means of exploiting the radioactive tracer method in the diagnosis of disease. Now, a revolution in non-invasive imaging in under way in medicine. This is especially true in the imaging of structure and function of the brain. The implications of this revolution are not only for enhancing the diagnosis of human cerebral disorders, but also for improving our understanding of how the brain works. The Nuclear Medicine program of the Department of Energy has been central in these developments.

Brain Imaging

In the past century, the great neurologists learned that brain lesions seen at autopsy could be associated with the signs and symptoms of their patients and, in brilliant ways, they developed clinical neurological examinations from which they could infer the nature and location of intracerebral disease in the living patient. Although marvelously integrated, the brain also functions in many ways as a collection of individual organs and what happens in one specific part of the brain can characteristically influence the patient's symptoms and signs. However, the soft tissue of the brain is protected in a bony box and is not so easily examined as the abdomen

by palpation, the lungs by auscultation, or the bones by simple radiography. Thus, the subsequent introduction of neuroradiological techniques such as air contrast pneumoencephalography, contrast arteriography, and more recently, x-ray computed tomography (CT), have had great influence on the diagnosis of intracerebral disease. This is especially so for mass lesions such as tumors, hematomas, and abscess. Brain diseases lacking such focal alterations in brain structure have remained more difficult to localize by imaging methods.

At the same time as clinical diagnosis of focal brain lesions improved, neuroscientists advanced understanding of brain organization and function. It was learned that as each part of the normal brain performs the work of receiving and transmitting electrical information, the required energy is provided by proportionate increases and decreases in local metabolism which in turn cause proportionate increases and decreases in local blood flow, as required to provide an appropriate supply of metabolic substrates. Neurochemical studies yielded new insight into how messages are transmitted from one part of the brain to another. A major restriction in neuroscience persisted. Studies depending on destructive testing remained limited to animal models of disease or to autopsy specimens from patients.

One approach to extending neurochemistry research to the living human brain was by exploiting the radioactive tracer method. In theory, extremely small amounts of appropriately chosen chemicals might be labeled with radioactivity, injected intravenously, and their involvement in cerebral processes measured by external detectors. In practice, this was difficult to accomplish because the radiations coming from each small part of the brain had to be gathered and analyzed separately from those of their neighbors, and the significance of these data had to be interpreted in terms of real physiological processes.

Partial solutions were to come from nuclear medicine programs supported by the Atomic Energy Commission in the early 1950s. One step in this quest was the introduction of the rectilinear radionuclide scanner which was subsequently applied for non-invasive detection of brain tumors. Simple

compounds labeled with radioisotopes of iodine, mercury, or later, technetium were injected intravenously in patients suspected of having brain tumors. Because of the different permeability of blood vessels in tumors as compared to normal brain, tumor radioactivity could be detected as an enhanced zone in pictures made by systemically moving a collimated scintillation detector in a rectilinear raster over the brain and recording brain radioactivity by means of a flashing light on film. From another nuclear medicine project sponsored by the Atomic Energy Commission, the scintillation camera was introduced and the scanning process was made even more efficient. Brain radioactivity could now be imaged as a picture projected on a large thin crystal of sodium iodide where individual light flashes were sorted out by an array of photo multiplier tubes. With Atomic Energy Commission support, the combination of scintillation camera and the short-lived radionuclide technetium-99m became the mainstay of clinical nuclear medicine and remains one of the most important diagnostic methods in hospital use today for management of a wide variety of diseases.

With ordinary rectilinear scanner or scintillation camera imaging, radioactivity from different individual parts of the brain were superimposed and obscured; accurate separation of their individual activities depended on the introduction of reconstruction tomography. Supported by Atomic Energy Commission funding, Nuclear Medicine investigators succeeded in displaying brain radioactivity as a cross-section or tomograph in the early 1960s, well before the subsequent introduction of x-ray computed tomography which influenced so greatly the practice of diagnostic radiology. Emission tomography was accomplished then by systemmatically scanning the edges of a particular plane in the brain and back projecting these data to produce reconstructed images of brain radioactivity in cross-section. This approach had considerable advantage in separating images of brain structures one from another, and later, with algebraic computer reconstruction, produced images that were nearly exact quantitative reconstructions of actual brain radioactivity concentration. Emission computed tomography might now be used to image local brain physiology.

PET and FDG

An important extension of the emission tomographic method was the introduction of Positron Emission Computed Tomography (PET), a system that requires an onsite cyclotron, but that makes possible accurate transverse reconstructions of circulatory and metabolic tracers that can be labeled with carbon-11, oxygen-15, nitrogen-14, and fluorine-18. These are short-lived positron emitting isotopes of naturally occurring elements which potentially might be incorporated into a wide variety of natural substrates of brain biochemistry. Now, or in the near future, PET should permit an investigator to map local cerebral values of blood flow, blood volume, oxygen and glucose utilization, protein synthesis, amino acid utilization, and receptor binding of several neurotransmitters.

One of the most important of these PET studies is the mapping of cerebral glucose metabolism using ^{18}F-fluorodeoxyglucose (FDG). The method depends on the special characteristics of FDG which is taken up by each part of the brain in a manner very similar to ordinary glucose, but which is metabolized no further than glucose-6-phosphate. The result is a cross-sectional map where the intensity of each part of the picture is proportional to glucose metabolism at the time of the study. Glucose utilization maps are of scientific and clinical significance because each part of the brain depends primarily on glucose for its energy needs and these needs are directly proportional to local function. In a number of laboratories, the FDG scan is now used to understand better the growth of brain tumors and for localizing and characterizing cerebral dysfunction undetected by x-ray computed tomography in cerebral vascular, degenerative, and epileptic disorders. One important example is the use of the FDG scan in the study of dementia.

Dementia and FDG

The prevelance of dementia in the elderly has gained in importance as the human life span has increased. This has stimulated efforts to understand basic mechanisms of the dementia syndrome and to develop new methods for earlier recognition and clinical management of Alzheimer's disease (AD) and

other causes of dementia. About 5% of those over the age of 65 years suffer from dementia with severe impairment in cognitive functions. An additional 10% of individuals in this age group have mild to moderate abnormalities in cognitive abilities. Yet the presence of early dementia is commonly misdiagnosed.

Retrospective studies have reported 10 to 50% error rates, mostly resulting from affective disorders, usually depression, or normal aging changes, which were misinterpreted as dementia.

At least half of demented persons have Alzheimer's disease. Another 25% have Multiple Infarct Dementia (MID) due to a series of small strokes. There is evidence that cognitive deficits in AD, especially memory, are related to a disorder of cortical cholinergic innervation associated with selective degeneration of cholinergic neurons whose cell bodies lie in small nuclei at the base of the brain. The typical clinical pattern of insidious onset and progressive cognitive decline has been correlated with the neuropathologic characteristics of Alzheimer's disease; neurofibrillary tangles, plaques, and granulovacuolar degeneration of neurons in the cortex. The diagnosis ultimately remains a pathologic diagnosis, but since none of the neuropathologic lesions are unique to AD, it is their number and distribution in the presence of the appropriate clinical findings that characterize Alheimer's disease. X-ray computed tomography aids exclusion of stroke or tumor, but there is no specific radiological or biochemical marker for AD.

FDG scans in patients with Alzheimer's disease (figure 1) show that glucose utilization is markedly reduced in cortex and relatively preserved in caudate and thalamus (deep nuclei concerned with mobility) and calcarine occipital cortex (visual cortex concerned with perception). This pattern of hypometabolism follows closely the degree and location which has been reported for pathological and neurochemical alterations. The posterior parietal and superior temporal cortex of AD patients is the site of most severely reduced glucose utilization. Studies at UCLA show that a metabolic ratio relating

measures in the most and least severely affected locations (parietal/caudate-thalamus) discriminates AD patients clearly from other subjects, even in early stages of the disease (figure 1), indicating that this ratio should be useful as a sensitive index of AD-related cerebral hypometabolism.

In patients with Multiple Infarct Dementia, the characteristic FDG scan pattern consists of random focal deficits in an otherwise normal metabolic distribution (figure 2). The FDG scan is a more sensitive indicator of stroke sequelae than is the CT scan. Both studies demonstrate the results of frank tissue destruction within focal infarcts, but only the metabolic pattern is altered in more distant projection sites, where disconnection of fiber tracks has caused mild hypometabolism within structurally intact tissue.

The movement disorder in Parkinson's disease (PD) is considered to stem from a focus of neuron degeneration in the substantia nigra which in turn causes depletion of the neurotransmitter dopamine within the caudate. A third to a half of all patients with PD eventually develop dementia. Some demented patients with PD share pathological and neurochemical features of demented patients with AD, such as cell loss in basal forebrain nuclei, cortical plaques and neurofibrillary tangles, and decreased cortical choline acetyltransferase. At UCLA, we found cerebral glucose metabolism to be reduced uniformly throughout the parkinsonian brain (average 18% decrease), although PD is generally regarded as a selective degeneration involving the nigro striatal system. With increased severity of the movement disorder and development of dementia, brain metabolism decreased further, but the degree of decline was not associated with the duration of the disease. In addition, demented PD patients had FDG scan patterns resembling those found in AD (figure 3). A pattern of bilateral parietal hypometabolism associated with relative caudate-thalamus metabolic sparing is an early and characteristic finding in both AD and PD. This finding is additional evidence that a common mechanism may be operating in both Parkinson's disease and Alzheimer's disease.

Huntington's disease (HD) is an inherited degenerative disorder of unknown cause characterized by the progressive development of chorea and dementia. There is evidence that at least the motor symptoms may result from an imbalance in the effects of dopamine, acetylcholine, and gamma-aminobutyric acid released from nerve terminals in the striatum and substantia nigra. At autopsy, the brain typically shows wide spread neuronal cell loss and glial proliferation, particularly in the caudate, putamen, and cerebral cortex.

FDG scans at UCLA indicate that in HD there is a characteristic decrease in glucose utilization in the caudate and putamen and that this local hypometabolism appears early and precedes any bulk tissue loss that may be demonstrated by computed tomography (figure 4). In contrast to demented patients with Alzheimer's disease or Parkinson's disease, in these HD patients glucose utilization typically was normal throughout the rest of the brain, regardless of the severity of symptoms and despite apparent shrinkage of brain tissue. In asymptomatic subjects at-risk for HD, CT scans were normal but caudate hypometabolism was seen in some. This suggested to us the possibility that striatal glucose utilization might be reduced in asymptomatic carriers of the autosomal dominant HD gene. This inference has now been strengthened by the subsequent appearance of HD symptoms in three of these patients in whom we had detected caudate hypometabolism at a time when they were asymptomatic at-risk subjects (figure 5). Longer term, longitudinal studies of asymptomatic offspring of parents who have HD should demonstrate if striatal hypometabolism is common in carriers and may act as a marker for increased probability of developing clinical expression of the disease.

Promise

Studies such as these give promise that other biochemical abnormalities may be detectable even earlier in the course of dementing processes, making diagnoses possible when brain cells are still preserved and receptive to new corrective therapies. Concomitant assessments of the brain nutrient supply and utilization, protein synthesis, and neurotransmitter-receptor relations in early disease should help determine which are the primary dementing processes

in different degenerative diseases. Future diagnosis and management of dementing disorders may depend on such data.

At present, PET is an important research tool for biochemical assay of the living brain, and at the same time, a complex and expensive technology. There is hope that once the scientific basis of a physiological imaging study is established using PET technology, similar diagnostic information might be provided by more inexpensive approaches, such as single photon emission computed tomography (SPECT) using technetium-99m or iodine-123 radionuclides.

X-ray computed tomography and magnetic resonance imaging already provide the physician with the ability to visualize the gross structure of the brain of a living patient with a facility that not too many years ago was only possible at the autopsy table. Now we are entering a period of facile examination of how each part of the brain functions in its biochemical activities, and this has never before been available to us.

These are the kinds of successes and opportunities made possible by the Nuclear Medicine program of the Department of Energy.

STATEMENT OF MID-WEST ELECTRIC CONSUMERS ASSOCIATION, INC.

This statement is submitted by Mid-West Electric Consumers Association, Inc. It is directed at the proposal included in the Administration's F.Y. 1986 budget to force astronomical increases in the rates for federally generated power marketed by the federal power marketing administrations, including Western Area Power Administration (WAPA), which markets power from, among others, the Pick-Sloan Missouri Basin Program. This proposal will be carried into effect if Congress, in passing the fiscal year 1986 appropriation bill for energy and water development, adopts the directory language (section 308) appearing at pages I-J30 in the Appendix to the Budget for F.Y. 1986 under the heading "General Provisions - Department of Energy."

Mid-West, formed in 1958, is a South Dakota nonprofit membership corporation headquartered in Evergreen, Colorado. It is the regional service agency of rural electric cooperatives and publicly owned electric systems located in nine Missouri River basin states: Colorado, Wyoming, Montana, North Dakota, South Dakota, Nebraska, Kansas, Iowa and Minnesota. Mid-West is composed of over 300 electric systems which serve over 3,000,000 consumers. Its purpose is to foster an adequate supply of low cost and dependable electric power for its members and, generally, to promote the interests of electric consumers in the region. Most, if not all, Mid-West member systems directly or indirectly purchase power generated at Corps of Engineers and Bureau of Reclamation Pick-Sloan Missouri Basin Program ("Pick-Sloan") hydroelectric plants and marketed by WAPA.

Focussing on Pick-Sloan, the Administration's proposed Section 308 would mandate a rate increase for fis-

cal year 1986 of over 69%, rising by 1988 to almost 72%. On the patently absurd assumption that interest rates payable by the federal treasury on its borrowings will decline in fiscal year 1989 to 7.75% and in 1990 to 6%, the projected rate increases sought to be imposed for those years would be 43% and 31-1/2% respectively. Of course, any assumption that federal interest rates will decline from their present level of over 11% to anything like 7-3/4% and 6% by fiscal years 1989 and 1990 is fanciful in the extreme. If one takes a more realistic view of future federal interest rates, the forced rate increases for 1989 and 1990 would more than likely be on the same order as the rate increase envisioned by OMB for fiscal 1988, that is to say, that the increase would continue to hover at a level of more than 70% for the indefinite future.

These draconian increases result primarily from the proposal that interest on the unamortized balances of the federal investment be calculated each year on the then current interest rate being paid by the federal government on new borrowings, rather than on the interest rate paid by the United States at the time of project construction, when the money involved was borrowed. And as an element of this interest rate proposal, interest would be charged on the irrigation costs that are being repaid from power revenues. As the subcommittee knows, water users pay only that portion of the irrigation costs as is within their repayment ability. Interest is not charged. The balance of the principal is repaid from power revenues, in addition to repayment, with interest, of the power investment itself. Charging interest on irrigation costs would be a drastic reversal of

the federal reclamation laws. Under those laws, the federal government foregoes interest on irrigation costs.

A secondary contributing factor to these draconian rate increases would be a change to straight line amortization from the present and long-standing requirement that costs to be repaid from power revenues be repaid over the 50 year repayment period, but not necessarily on a scheduled straight line basis. Repayment of the investments borne by power revenues over the repayment period, rather than under a fixed schedule of amortization, affords the flexibility required for rate stability in marketing hydroelectric power where the available water supply can vary greatly from year to year due to vagaries of the weather cycle.

Most of the end-users of Pick-Sloan power are the farmers and residents of the small towns that make up rural America.

How ironic that at the very time when agriculture is beset by depression conditions unseen since the 30's, the Administration should be seeking to add to the woes of American agriculture by these monumental increases in power rates which are sought to be rushed through Congress via the budget process.

This astounding proposal on power rates is totally unwarranted. The interest rate charged on amortization of the costs of power development is based on what it cost the government to borrow the money at the time the developments were undertaken. Charging what it costs the government to borrow the money today, or what it will cost next year, long after the investments have been made, bears no relationship whatsoever to costs actually incurred. What is being proposed, therefore, is in plain and simple terms a special

sales tax of monumental proportions levied on one class of purchasers -- the purchasers of federally generated power. They, largely farmers and small town residents, have every right to object to this attempt to foist special taxation on them.

The municipalities and cooperatives, yes, and the private utilities as well, that purchase Pick-Sloan power do so on the basis of contracts that are premised on long-standing payout requirements reviewed and sanctioned by Congress time and again. To rush in, through the budget process, with a complete revision is unconscionable. What would the reaction of a home owner be if, having entered into a fixed rate mortgage, he is told by his lender that from here on out the interest rate that the home owner agreed to pay is going to be doubled or tripled?

Mid-West and its member cooperatives and municipalities have documented the devastating economic impact on the economy of the individuals and communities served by Pick-Sloan power that will be the certain result if the Administration gets away with its attempt to force these draconian power rate increases. A few representative samples are enclosed.

In the budget blitzkrieg which David Stockman has been directing to force these rate increases, the impression has been left that the Power Marketing Administrations have been violating or, at the very least, skirting, the law and that Mr. Stockman is only trying to get them back on track. But Secretary of Energy Herrington, responding to recent questions from the Senate Committee on Energy and Natural Resources, has conceded that not only BPA but the other PMA's as well are in compliance with their legal repayment obligations. The Administration no longer claims that the

PMA's are violating the law. Rather, the Administration is not happy with existing repayment law and wants it changed.

So what we have here is an argument over whether to change the law and if so, how. We are firmly convinced that the existing law is just and has worked as Congress intended. But the point we wish to make here is that the Administration, admittedly now wanting to change fundamental law, is seeking to do so by circumventing established Congressional procedure by seeking this change in law via the fine print of the appropriations process in the hope that the Appropriations Committee will join it in violating the rule against legislating via the appropriations process.

If the Administration thinks it has a case why does it not submit its legislation to the legislative committees?

We respectfully request that the subcommittee reject this unwarranted and unfair effort to needlessly jack-up energy costs to millions of power users.

The opportunity to submit this statement for the record is appreciated.

LETTER FROM LOUIS STROUP, JR., EXECUTIVE DIRECTOR, KANSAS MUNICIPAL UTILITIES, INC.

January 16, 1985

Senator Bob Dole
141 Hart Senate Office Building
Washington, D.C. 20510

Dear Bob:

It is my understanding that the Office of Management and Budget (OMB) has ordered a massive rate increase to be scheduled in the cost of federal hydro power and that this increase be scheduled in all federal power marketing budgets for FY 1986.

OMB has apparently informed the Southwestern Power Administration that it must raise an additional $83 million annually and if such a hike is implemented by SPA, it would raise the agency's rates to its customers by 92%.

Needless to say, such an arbitrary increase would have a devastating impact on our small municipal utiities in Kansas and the rural electric cooperatives which also purchase SPA hydro power.

Such an increase would raise the present cost of SPA power from 2.7 cents per KWH to 5.2 cents per KWH -- and this price does not reflect the cost of transmission to get the power back to Kansas (an almost prohibitive cost now which is being charged by the various private power companies through which the energy must travel).

Such a hike in power costs would force many of our municipal electric systems to burn natural gas and/or middle distillate which would be more economical than the artificially-priced federal hydro power under the OMB plan.

KMU also strongly opposes the method by which OMB seeks to require this absurd rate increase which is the abandonment of long standing federal rate and repayment policies which have served well the federal government and its preference customers -- our small towns and the rural areas of Kansas. The U.S.Department of Energy has a regulation (R.A.6120.2) which governs the manner in which federal power marketing agencies are to establish rates. Changes in rate and repayment policies may only be made after formal rulemaking proceedings in which all interested parties (including customers) may be heard -- or by an act of Congress. We feel OMB has not authority to arbitrarily order the proposed increases in federal hydro power rates.

As you know, we have two groups of cities affected by this OMB action: A group already purchasing federal hydro power from SPA and a group that has made application for federal hydro power from the Western Area Power Administration in WAPA's post-1989 marketing plan.

The SPA power is barely economical now (because of the high transmission costs) and the WAPA power might not be economical either if such a large increasase is arbitrarily added to its cost.

The cities purchasing SPA power are:

Kansas City	Garnett	Lindsborg
Coffeyville	Ottawa	Ellis
Anthony	Osawatomie	Sharon Springs
Winfield	Baldwin City	Oakley
Wellington	Wamego	Colby
Neodesha	Clay Center	Norton
Iola	Holton	Oberlin
Augusta	Horton	St. Francis
Chanute	Mulvane	

The cities seeking WAPA power include:

Kansas City	Washington	Norton
Alma	Vermillion	Colby
Eudora	Enterprise	Oakley
Baldwin City	Herington	Sharon Springs
Gardner	Lindsborg	Hill City
Osawatomie	Centralia	Ellis
Prescott	Robinson	Stockton
Burlingame	Horton	Russell
Osage City	Elwood	Lucas
Ottawa	Holton	Lincoln
Garnett	Clay Center	Osborne
Arcadia	Wamego	Cawker City
Glasco	St. Marys	Glen Elder
Seneca	St. Francis	Mankato
Summerfield	Oberlin	Belleville
		Beloit

Because of the extremely harmful effect OMB's proposal would have on these communities and the rural areas of Kansas, KMU strongly urges that you contact the OMB and urge the withdrawal of the proposal prior to February 4, when the federal budget is slated for public release.

Cordially,

Louis Stroup, Jr.
Executive Director

LETTER FROM GENE M. LINENEMANN, GENERAL MANAGER, WHEAT BELT PUBLIC POWER DISTRICT

February 22, 1985

Honorable Virginia Smith
2202 Rayburn House Office Building
Washington, D.C. 20515

Dear Congresswoman:

I understand that you have been appraised of the latest attempt by OMB to increase the price of WAPA power and are already working on our behalf. We appreciate very much your assistance and want to offer any assistance (or ammunition) that might be helpful.

Wheat Belt alone would see their wholesale power increased by over $600,000 in 1986 if this proposal were implemented. It would amount to an average increase of about $150 for every meter that we serve. On the irrigation wells that we serve, it would average $300 each. With the current problems in the farm economy, they really don't need that kind of added burden.

I really can't see the reason for this and really can't think of a precedent for this kind of action. The interest to be repaid on these projects was determined at the time of construction exactly like a long-term fixed rate mortgage on a home or farm. I'm sure there have been many lenders in recent years who would have liked to have been able to switch fixed interest loans to variable rate loans!

In addition, I feel that they are being dishonest (or at least completely unrealistic) in their projection of a lessening of impact on the rates through 1990. They based that on the long-term interest rates dropping from a current 11.25 percent to 6.0 percent by 1990. We sure wish that would happen, but I can't think of anyone other than OMB who is that optimistic.

In any event, we appreciate your efforts very much on our behalf, and if there is anything we can do to assist you or if you would like more information, please let us know.

Very truly yours,

WHEAT BELT PUBLIC POWER DISTRICT

Gene M. Lienemann
General Manager

Letter From Bill Muller, Mayor, Beresford, S. Dak.

March 6, 1986

Hon. Jamie L. Whitten, Chairman
House Appropriations Committee
U.S. House of Representatives
Washington, D.C. 20515

Dear Hon. Whitten,

We are writing to express our great concern regarding the attempt by the Office of Management and Budget to force astronomical increases in the rates for federally generated power marketed by the federal power marketing administration which markets power from the Pick-Sloan Missouri Basin Program. This OMB proposal will be carried into effect if Congress, in passing the 1986 appropriation bill for energy and water developement, adopt the directory language in the Administration's F.Y. 1986 budget that went to Congress on February 4, 1985.

The increase (approximately $100,000 annually) that this will cause in our electric costs, which will have to be passed on to our customers, will cause a big hardship to the people of our community who are already trying to cope with depression conditions worse than the 1930's.

We take this means to lodge our vigorous protest to this increase and ask that you oppose this unwarranted and unfair effort to needlessly raise energy costs to millions of power users.

Letter From Russell Dau, General Manager, Missouri Basin Municipal Power Agency

March 1, 1985

Mr. Fred Simonton, Executive Director
Mid-West Electric Consumers Association
Box 910
Executive Office Building, Suite 300
Evergreen, Colorado 80439

Dear Fred:

As we discussed at our meeting in Washington on February 24, I am enclosing a copy of a letter which has been sent to all of our members who are WAPA customers.

Included with each letter was a copy of the APPA Fact Sheet dated for January 18, 1985.

We also sent a printout to each city showing the increase in power costs to the city if this scheme were to be placed in effect.

The total increase in power costs to our membership over the period 1986-1990 adds up to $50.5 million dollars, or just about a million dollars per member average. I should point out that this is a very conservative estimate and assumes

OMB's prediction that interest rates will decline to 6 percent by 1990 is correct.

In 1986 alone we would see our members power cost jump by $12,876,000.

Sincerely,

Russell Dau
General Manager

LETTER FROM DAVID D. FERRIS, SUPERINTENDENT, LENOX MUNICIPAL UTILITIES, IOWA

March 13, 1985

Honorable Tom Harkin
Senator
705 Hart Senate Office Bldg.
Washington, D. C. 20510

Dear Mr. Harkin,

This is what the proposed budget by Mr. Stockman will do for us. Unlike Mr. Stockman, I do not believe interest rates will drop from 11.15% in 1986 to 6% by 1990. If interest rates do not drop, these figures will be worse.

Present Annual Cost to WAPA Power	.00675 per KWH
Increase in Cost of WAPA Power	.00941 per KWH
New Cost of WAPA Power	.01616 per KWH
Present Annual Cost	$ 59,768.40
Increased Annual Cost	$ 83,369.46
New Annual Cost	$143,137.86
Percentage Increase	139%
Present Annual Cost to Consumers	$374,091.61
New Annual Cost to Consumers	$457,461.07
Percentage Increase to Consumers	22%

This is why we need your support on this issue and any issue that would jeopardize the Public Power Preference Clause.

Sincerely,

David D. Ferris

David D. Ferris, Supt.

LETTER FROM AL JORGENSEN, CITY CLERK, ADMINISTRATOR, TYLER, MINN.

February 19, 1985

The Honorable Dave Durenberger
The United States Senate
Washington D.C. 20510

Dear Senator Durenberger,

It has come to my attention that many Rural Electric Co-Operatives and small municipal power systems served by Power Marketing Associations (PMA) such as Western Area Power Administration (WAPA) are about to become the victims of some dastardly skulduggery eminating from the OMB. Sec 308 of the Appendix to the Budget for FY 1986 as proposed by Mr. Stockman could effectively sound the death knell for an already devastated agricultural communtiy. Small cities in rural America that are based largely on ag-related services and which enjoy a disproportionate population of senior citizens and others living on a fixed income would simply cease to exist.

Tyler purchases power from two sources. WAPA is the primary supplier and supplemental energy is purchased from Heartland Consumers Power District. Approximately 70% of the energy is furnished by WAPA. In 1984 8,408,328 KWH were purchased at a cost of $58,138.00. Under the proposal in Sec 308 that same energy will cost $137,260.00 in 1986. This is approximately a 130% increase. Rather a dramatic increase under an administration that claims to have inflation under control. With 700 connections on the Tyler Municipal Light and Power this translates into a $110.00 annual average increase on each consumer's electric bill.

Our information indicates this proposal will be heard on March 25 and 26, 1985 before the Committee on Energy and Water Development. Realizing the dependance rural America has on low-cost energy it is imperative that you use whatever influence you can to insure Sec 308 be stricken from the Appendix to the Budget for Fiscal Year 1986.

Respectfully,

Al Jorgensen
City Clerk, Administrator

LETTER FROM TERRY M. JECH, GENERAL MANAGER, KEM ELECTRIC COOPERATIVE INC.

February 21, 1985

Honorable Byron Dorgan
238 Cannon Office Building
U. S. House of Representatives
Washington, D. C. 20515

Dear Congressman Dorgan:

As manager of KEM Electric Cooperative in Linton, North Dakota, I am writing to express my outrage at the attempts of the Office of Management and Budget to force the arbitrary increase of wholesale power rates by the federal power marketing administrations. This unfair directive is included in the 1986 appropriations bill for energy and water development as outlined in the Administration's FY1986 budget that went to Congress on February 4. These increases are primarily a result from the OMB's proposal that the interest on the unamortized balances of the federal investment in these projects be calculated each year on the current interest rate rather than the interest rate at the time the federal government borrowed the funds.

The KEM Electric Cooperative membership is almost totally comprised of grain farmers, dairy farmers and ranchers. Our large service area includes slightly over 100 townships which are very sparsely populated. We serve approximately 3,330 meters with 3,041 miles of line for a density of 1.09 consumers per mile of line. In 1984 KEM purchased 54.3% of our wholesale power from Western Area Power Administration. With our low consumer density our rates at KEM are slightly higher than the local investor owned utility even though we purchase cost-based power from WAPA. The staff of KEM Electric has calculated the effects of the OMB's proposal to our organization. In the first year alone, the additional cost to KEM's consumers would amount to $287,683. By the year 1990 the OMB's proposal would increase our costs $1,090,289. KEM's retail rates would have to increase nearly 65% over the next five years just to recover the additional expenses to the Cooperative.

As you know Congress recently passed a resolution forbidding the study of market-based pricing for federally generated power marketed by the federal marketing administrations. Congress realized that this power is owned by the public, was developed with public funds and support, is generated from public resources, and is being repaid by the public. Any attempt to affix more than cost-based pricing to this power would inflict astronomical hardships on the very public that owns these resources. I view the OMB's proposal as an attempt to usurp the intent of Congress by simply using a different approach to achieve the same means.

Most of the consumers of federally marketed power are farmers and the residents of small towns that make up rural America. It is tragic at the very time the rural economy is at its most depressed state in decades, Mr. Stockman is seeking to further impose financial hardships by sneaking this proposal through the budget process. It does not come as any surprise considering his testimony against rural America before the Senate Budget Committee on February 5th but, nevertheless, it is tragic.

The Secretary of Energy Designate Harrington at his confirmation hearings before the Senate gave little support to the OMB's attempt. Mr. Harrington stated "I think first of all the government is not in the business to make money." He also stated his interest in economic stability. He recognized that business people make deci. ions that are based on certain government factors and if those factors later change, people find themselves thwarted. He further testified that "People need to rely on the government from year to year."

Mr. Harrington's statements are certainly true today. Municipal electric systems, rural electric cooperatives, and even private owned utilities who purchase federal power have made long range decisions based on long standing pay-out requirements which have been sanctioned by Congress time after time. To arbitrarily change these requirements now would needlessly raise the energy costs to millions of mostly rural consumers.

Your support for rural electric cooperatives has been unwaivering in the past. I am sure that support will continue in this matter. I strongly urge you to solicit the support of your colleagues to defeat this attempt by the OMB to impose additional costs on our consumers.

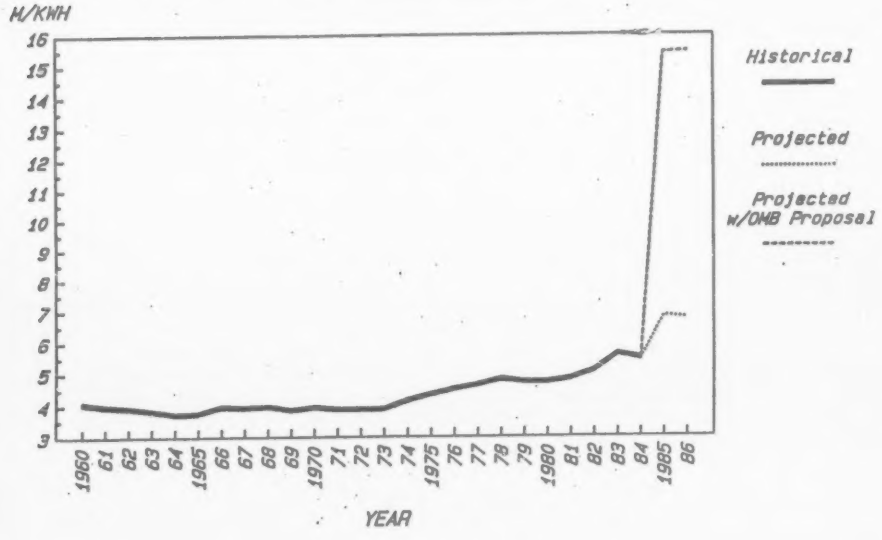
Sincerely,

Terry M. Jeck

Terry M. Jeck
General Manager

Northwest Iowa Power Cooperative

NIPCO Costs (m/kWH) for WAPA



LETTER FROM TERRY M. JECH, GENERAL MANAGER, KEM ELECTRIC COOPERATIVE INC.

March 5, 1985

Alex Radin, Executive Director
American Public Power Association
2301 M. St. N.W.
Washington, D. C. 20037

Dear Mr. Radin:

On February 4 of this year the Administration's FY1986 budget was submitted to Congress. Included in the appropriations bill for energy and water development is a directive to arbitrarily increase the wholesale power rates for federally generated power marketed by the federal power marketing agencies. The proposed increases are primarily a result of the Office of Management and Budget's proposal that the interest on unamortized balances be calculated each year on the current interest rate rather than the interest rate at which the money was borrowed. This proposal would adversely affect many municipal electric systems and rural electric cooperatives.

KEM Electric Cooperative is located in southcentral North Dakota. Our service area covers most of a 3600 square mile area. We serve 3,331 meters on 3,041 miles of line for a consumer density of 1.09 consumers per mile. In 1984 KEM Electric purchased 54.3% of our wholesale power from the Western Area Power Administration. Even with this favorable allocation of federal hydropower our retail rates are still slightly higher than the local investor-owned utility because of our extremely low consumer density. Congressional approval of the OMB's proposal would force KEM to raise retail rates nearly 65% over the next five years. This represents an additional increase in expenses of over $1,090,000 to be recovered from 3,331 meters by the year 1990. I have enclosed a copy of our calculations for your review.

Even though this is a serious problem for our small cooperative, we view this problem as a tremendous opportunity. We realize that REC's have been subjected to seemingly insurmountable odds since our inception. We were successful in our efforts because consumer-members banded together and fought for their cooperative. This attitude is being revived at KEM Electric after years of dormancy.

We are using the key woman at KEM Electric to spearhead a letter writing campaign to a select group of federal legislators expressing our outrage at Mr. Stockman's proposal. The KEM Electric service area has been divided into nine director districts. Each district has a volunteer district leader who reports directly to the key woman. The responsibility of these district leaders is to secure enough volunteer workers to entirely canvass their district. Our goal is to have at least 50% of our members write the requested letters by a March 18 target date. To date enthusiasm seems to be running high for this effort. Approximately 40 woman volunteers have responded within just a few days.

I have visited with Fred Simonton, Executive Director, Midwest Electric Consumers Association and Leland "Chub" Ulmer, Executive Vice President and General Manager of the North Dakota Association of Rural Electric Cooperatives. These gentlemen have suggested the appropriate legislators to contact and have pledged to assist us in spreading our message within the state of North Dakota and the midwest region. We are sincerely grateful for their support.

I know your association is using its influence on the federal level to vigorously protest Mr. Stockman's efforts to force these unwarranted wholesale power increases. As the APPA and rural electric cooperatives coalesce we can be successful in our efforts. I sincerely appreciate the work of your association.

If you or any of the staff at APPA have any suggestions or comments that might improve KEM Electric's efforts on our local level, please feel free to contact me.

Sincerely,

Terry M. Jech
General Manager

EFFECT OF PROPOSED WAPA INCREASE (KEM)

	1986	1987	1988	1989	1990
All Costs Except Power	$1,658,094	$1,757,580	$1,863,035	$1,974,817	$2,093,306
Power Costs Without Proposed WAPA Increases	$1,971,517	$2,199,835	$2,229,175	$2,313,881	$2,431,890
Total Cost of Electric Service Without Proposed Wapa Increases	$3,629,611	$3,957,415	$4,092,210	$4,288,698	$4,525,196
Proposed WAPA Increases	$ 267,612	$ 506,890	$ 720,136	$ 885,340	$1,014,223
Total Cost of Electric Service With Proposed WAPA Increases	$3,897,223	$4,464,305	$4,812,346	$5,174,038	$5,539,419
Operating Margins of 7.5%	$ 292,292	$ 334,823	$ 360,926	$ 388,053	$ 415,456
Total Electric Revenue Required	$4,189,515	$4,799,128	$5,173,272	$5,562,091	$5,954,875
Total KWH Sales	49,926,000	50,682,000	51,450,000	52,229,000	53,020,000
Average Revenue Required - per KWH	8.4¢	9.5¢	10.1¢	10.6¢	11.2¢

NOTE: Actual Revenue per KWH in 1984 - 6.4¢
Estimated Revenue per KWH in 1985 - 7.0¢

LETTER FROM WILLIAM G. TOBIN, MANAGER, ROCK RAPIDS, IOWA

MARCH 15, 1985

SENATOR CHARLES GRASSLEY
135 HART SENATE OFFICE BUILDING
WASHINGTON D.C. 20510

DEAR SENATOR GRASSLEY:

YOU ARE VERY MUCH AWARE OF THE ECONOMIC CONDITIONS THAT PLAGUE THE FARMERS AND MERCHANTS OF IOWA AND THE REGION.

THE REGAN ADMINISTRATION WOULD NOT PERMIT LEGISLATION TO BECOME LAW WHICH WOULD BENEFIT THE FARMER AND OUR LOCAL ECONOMY, AND IT IS IMPERATIVE THAT THE ADMINISTRATION'S BUDGET PROPOSAL TO INCREASE THE RATES FOR FEDERALLY GENERATED POWER BE SOUNDLY DEFEATED TO PREVENT FURTHER HARDSHIPS FOR THE PEOPLE OF THIS DEPRESSED AREA.

OMB'S PROPOSAL TO DEVIATE FROM THE LONGSTANDING POLICY OF COST-BASED PRICING FOR THE FEDERALLY GENERATED HYDRO-POWER PURCHASED BY ROCK RAPIDS IS UNCONSCIONABLE.

ROCK RAPIDS IS A WHOLESALE CUSTOMER OF THE WESTERN AREA POWER ADMINISTRATION (WESTERN). WESTERN HAS RECENTLY PREPARED INFORMATION TELLING ITS CUSTOMERS WHAT RATE INCREASE WILL BE NECESSARY TO MEET THE ADMINISTRATION'S FY 1986 BUDGET PROPOSAL.

THE POWER AND ENERGY THAT ROCK RAPIDS MOST RECENTLY PURCHASED FROM WESTERN COST $11,021.71. THE OMB PROPOSED RATE PREPARED BY WESTERN AND PRESENTED IN THE REPORT ENTITLED "FEDERAL POWER MARKETING REPAYMENT REFORM" WOULD HAVE REQUIRED ROCK RAPIDS TO PAY $29,306.36 FOR THE SAME AMOUNT OF POWER AND ENERGY, AN INCREASE OF $18,284.92 OR 165.9%.

OMB'S PROPOSAL TO FIX POWER RATES BASED ON INTEREST RATES THAT REFLECT THE CURRENT COST OF MONEY TO THE GOVERNMENT IS NOTHING MORE THAN A SPECIAL TAX THAT IS BEING INDISCRIMINATELY AND UNFAIRLY IMPOSED ON ONE CERTAIN CLASS OF CITIZEN.

I URGE YOU TO USE YOUR INFLUENCE AND YOUR VOTE TO SEE TO IT THAT THIS UNFAIR "SPECIAL TAX" IS NOT IMPOSED UPON THE CITIZENS OF WESTERN IOWA.

SINCERELY,

Bill Tobin

WM G. TOBIN
MANAGER

LETTER FROM NORTHWEST IOWA POWER COOPERATIVE

February 22, 1985

Sir: In Reply Refer to: Code 100

SUBJECT: OMB's Proposal on Federal Power Marketing Rates

It is becoming increasingly evident there is no limit to what the Reagan Administration will recommend to destroy the family farm.

He has already indicated he intends to severely cut the farm program and has made it known the Rural Electrification Program should be phased out by 1990. Now he has instructed the Federal power marketing agencies to increase our hydro rates by using fictitious numbers in their rate base.

He has directed, in NIPCO's case for example, that the Western Area Power Administration include all facilities in the Pick-Sloan Program in the rate base, and for 1986 use an interest rate of 11.25 percent. Details of these added payments are outlined in the Federal Power Marketing Repayment Reform, dated February, 1985.

NIPCO serves 11 distribution systems in western Iowa. In 1984 NIPCO purchased approximately 46 percent of their wholesale power needs from the Western Area Power Administration (WAPA).

This directive by OMB will have a devastating effect on NIPCO and our distribution members, and their 28,800 consumers. These 28,800 consumers are all rural or small townfolk, not urban or suburban, and all are victims of the disastrous farm economy. Our calculations show the following statistics:

1.	Present cost of WAPA power -	6.81 mills
2.	Proposed increase in cost of WAPA power -	9.41 mills
3.	Net cost of WAPA power -	16.22 mills
4.	Present annual cost of WAPA power -	$ 1,722,000
5.	Increased annual cost of WAPA power -	2,176,800
6.	New annual cost of WAPA power -	3,898,800
7.	Percent increase -	126%
8.	Present annual power cost (all sales) -	$24,298,000
9.	New annual power cost -	26,474,800
10.	Percent increase to members from NIPCO -	9.0%

LETTER FROM WILLIAM HEIT, MANAGER, UPPER MISSOURI G&T ELECTRIC COOPERATIVE

February 26, 1985

Fred Simonton
Midwest Electric Consumers Association
P.O. Box 910
Evergreen, Colorado 80439

Dear Fred:

Enclosed is a calculation of the effect of the proposed OMB proposal for increasing the cost of Federal Hydro Power. We have 36,000 member consumers.

Present Annual Cost of WAPA power	7.646 mills/kwh
Increase in cost of WAPA power	9.410 mills/kwh
New cost of WAPA power	17.056 mills/kwh
Present Annual cost of WAPA power	$2,236,397
Increased cost of WAPA power	2,740,098
New annual cost of WAPA power	4,976,495
Percentage increase	123%
Present Annual cost to members for power	56,317,887
New annual cost to members for power	59,057,985
Percent increase to members from Upper Missouri	4.8%

Sincerely,

William Heit

William Heit
Manager

LETTER FROM LOREN ZINGMARK, GENERAL MANAGER, EAST RIVER ELECTRIC POWER COOPERATIVE, INC.

February 19, 1985

The Honorable Larry Pressler
407A Russell Senate Office Building
Washington, D. C. 20510

The Honorable James Abdnor
SH-309 Senate Office Building
Washington, D. C. 20510

The Honorable Tom Daschle
439 Cannon House Office Building
Washington, D. C. 20515

Gentlemen:

It's quite evident that there is no limit to what the Reagan Administration will recommend to destroy the family farm.

We already are aware of the fact that he intends to severely cut the farm program -- he has made it known that REA should be phased out by 1990, and now he has instructed the Federal power marketing agencies to increase our hydro rates by using fictitious numbers in their rate base.

He has directed, in our case for example, that the Western Area Power Administration include all facilities in the Pick-Sloan Program in the rate base, and for 1986 use an interest rate of 11.25 per cent.

As you know, East River serves twenty-five distribution systems in eastern South Dakota and western Minnesota. At the present time we purchase approximately 44 per cent of our wholesale power from the Western Area Power Administration.

This directive by OMB will have a devastating effect on East River and our distribution members, and their 60,000 member-consumers. Our calculations show the following statistics:

Present cost of WAPA power:	6.85 mills
Proposed increase in cost of WAPA power:	9.41 mills
Net cost of WAPA power:	16.26 mills
Present annual cost of WAPA power:	$ 4,631,480
Increase annual cost of WAPA power:	6,491,944
New annual cost of WAPA power:	11,123,424
Per cent increase:	140%
Present annual power cost:	$43,519,303
New annual cost to members for power:	50,011,247
Per cent increase to members from East River:	14.9%

It seems unconscionable that at a time when agriculture is beset by depression conditions, unseen since the Thirties, that this Administration would seek to find additional ways in which to ask agriculture for more money to help offset the national debt. As we listened to Mr. Stockman's diatribe before the Senate Budget Committee on February 5, it was sickening; however, it came as no surprise in light of his earlier statements!

As we understand the procedures of both the Senate and the House, this legislation will be brought before the Subcommittees on the twenty-fifth and twenty-sixth of March. This is

the time we understand that has been set aside for the power marketing administrations. We urge that we be given a chance to present the farmer's viewpoint -- the payer, if you will -- at such time as the Committees can schedule us into their hearings. However, prior to that time we urge you to vigorously oppose this scheme and join with us in this unwarranted and unfair effort to needlessly increase electric energy costs to millions of Americans who are purchasing Federal hydro power. We urge you to expose this unfair and uncalled for proposal in your newsletter and public appearances.

Sincerely,

Loren A. Zingmark

LETTER FROM JIM FOLLENSBEE, MANAGER, CENTRAL MONTANA ELECTRIC POWER COOPERATIVE, INC.

February 21, 1985

The Honorable John Melcher
United States Senate

Dear Senator Melcher:

We must vehemently protest David Stockman's recent proposal to artifically and arbitrarily increase interest rates and to reform procedures for repayment of principal on Federal investments in Pick-Sloan Missouri Basin hydroelectric power projects. These proposals are unjustified and contrary to the compacts Congress entered into with our people when these projects were built and will have a devastating effect on the rates we pay Western Area Power Administration (WAPA) for Federal hydropower.

The rate we currently pay WAPA was just increased 22% and is based on the repayment plan Congress approved when these hydropower projects were authorized and on the interest rate at which the government borrowed the money when the projects were constructed. We have signed long term firm power contracts with WAPA based on those covenants.

Now Mr. Stockman has proposed legislation in the Administration's budget that will arbitrarily change our contracts. He wants to set the interest rate "each fiscal year equal to the average yield during the preceding fiscal year on interest bearing marketable securities of the U.S.". Those rates have absolutely no bearing or relationship to the interest rate paid by the government when these projects were built, and are, therefore, totally unjustified.

Further, when these projects were built, Congress entered into a compact with the people wherein the repayment of principal would be based on an "ultimate development" concept. Here again Mr. Stockman wants to arbitrarily change the rules, and put the repayments on a straight line amortization basis--if (and get this) if this method will make the payments higher or at least equal to the present method. Little wonder that we are shocked and outraged!

What impact will this have on our Federal hydropower rates? According to the information developed by WAPA, the interest rate will be increased 725%!!! Our annual power rate will be increased an estimated $3,783,000 in 1986. Our WAPA power rate will be increased another 117%.

Who will pay this thinly disguised sales tax? Only the farmers and ranchers and rural communities of Montana and their downstream neighbors served by rural electric cooperatives. Their city cousins will get off scott free. We are confident you will vigorously oppose this astonishing and grossly unfair OMB proposal.

Very respectfully,

Jim Follensbee
Manager

Same letter sent to Montana Congressional Delegation

LETTER FROM GARY M. WILLIAMSON, GENERAL MANAGER, CENTRAL POWER ELECTRIC COOPERATIVE, INC.

February 6, 1985

Senator Mark Andrews
Dirksen Senate Office Building
Washington, D. C. 20510

Dear Senator Andrews:

Central Power Electric Cooperative, Incorporated is a North Dakota transmission cooperative serving the following eight member distribution cooperatives:

Baker Electric Cooperative - Cando, North Dakota
Capital Electric Cooperative - Bismarck, North Dakota
James Valley Electric Cooperative - Edgeley, North Dakota
McLean Electric Cooperative - Garrison, North Dakota
North Central Electric Cooperative - Bottineau, North Dakota
R.S.R. Electric Cooperative - Milnor, North Dakota
Tri-County Electric Cooperative - Carrington, North Dakota
Verendrye Electric Cooperative - Velva, North Dakota

We have just learned of a proposed Federal Power Marketing Repayment Reform for the fiscal 1986 budget. The changes called for in this proposal are for "repayment of principal at a level not less than a straight line amortization schedule based on useful service life up to 50 years and interest on the entire unpaid balance, including irrigation, set to match the prior year yield on treasury long-term borrowing."

The effect of this change on Central Power, our distribution members and their 38,000 member-customers would be devastating. Our calculations show the following statistics:

Present cost of WAPA power	7.42 mills/kwh
Increase in cost of WAPA power	9.41 mills/kwh
New cost of WAPA power	16.83 mills/kwh
Present annual cost of WAPA power	$2,168,871
Increased annual cost of WAPA power	$2,748,855
New annual cost of WAPA power	$4,917,726
Percent increase	127%
Present annual cost to members for power	$33,194,210
New annual cost to members for power	$35,943,065
Percent increase to members from Central	8.3%

This increase, along with the WAPA rate increase already in effect for 1985, results in an increase to Central Power's members of 9.6 percent. Central Power's cost to members has steadily increased from a low of 7 mills per kwh in 1972 to a high of 40.44 mills per kwh in 1984. We are forced by increasing costs to budget an approximate 10% increase in 1985, even without any further increase in WAPA rates. An 8.3% increase in addition to our budgeted 10% increase becomes nearly intolerable. Somewhere, somehow we must find some way to stop the spiral of ever increasing costs of power to the rural areas of North Dakota.

We respectfully request that you do everything in your power to resist changes contained in this proposal so that we may continue to purchase WAPA power for the fair price we have done in the past.

Sincerely,

CENTRAL POWER ELECTRIC COOPERATIVE, INC.

Gary M. Williamson
General Manager

LETTER FROM J.B. BRUS, GENERAL MANAGER, LYON LINCOLN ELECTRIC COOPERATIVE, INC.

February 18, 1985

The Honorable David Durenberger
353 Russell Senate Office Building
Washington, D.C. 20510

Dear Senator Durenberger:

I have just learned of the attempt by the Office of Management and Budget to incorporate major rate increases in the rates for federally generated power marketing administrations, which includes the Pick-Sloan Missouri Basin Program, from which many Minnesota rural electric cooperatives and municipal utilities receive an allocation of that federal power.

The changes called for in this OMB proposal, which is included in Section #308 of the Appendix To The Budget For Fiscal Year 1986, are for repayment of principal at a level not less than straight line amortization schedule, based on useful service life up to 50 years and interest on the entire unpaid balance, including irrigation, set to match the prior year yield on Treasury long-term borrowing.

The affect of this proposal would be devastating for Lyon-Lincoln Electric Cooperative and its member-consumers.

East River Electric Power Cooperative, Inc., who is the power supplier for Lyon-Lincoln Electric, projects that its power costs will increase $6,500,000 and Lyon-Lincoln Electric's proportional share will be $325,000 per year. This translates into a rate increase on the average of $86.00 per year for each of Lyon-Lincoln Electric rate payers.

In view of the fact that Lyon-Lincoln Electric's rate payers have had three rate increases within the past six years and taking into consideration the very depressed farm economy, this proposal by OMB is outrageous. This can be considered another move which would plunge the dagger of economic assassination deeper into the backs of the farmers and ranchers of Minnesota and the nation.

We respectfully urge that you utilize the influence and prestige of your office to eliminate this terrible proposal by OMB.

Sincerely,

J.B. Brus
General Manager

STATEMENT OF KEN HOLUM, BETHESDA, MD.

A month ago I retired from my position as general manager of Western Fuels Association, Inc. Much of the time since then has been spent cleaning out my office and making the adjustments that one has to do under these circumstances. I had been general manager of Western Fuels from the date of its incorporation -- July 7, 1976 -- until February 28, 1985.

Prior to that time, specifically during the 1960's, I served eight years as Assistant Secretary of the Interior during the administrations of President Kennedy and President Johnson. My title was Assistant Secretary for Water and Power Development. In that capacity I provided day-to-day supervision and policy guidance to the Bureau of Reclamation and the other power marketing agencies: the Bonneville Power Administration, the Southwestern Power Administration; the Southeastern Power Administration, the Alaska Power Administration, the Defense Electric Power Administration, and the Office of Saline Water. My experience as a Government official prompted my request to appear before this Subcommittee.

I have requested this opportunity to appear before this important Subcommittee of the Congress to urge you to reject Section 308 of the appropriation bill as it was submitted to the Congress by the Executive Branch. Section 308 must have been prepared by individuals unfamiliar with the history of water resources development and the obligations accepted both by the United States Government and the users that benefit from Federal multipurpose water resources development.

Early in my Government career, the Department of the Interior was confronted with a difficult and sensitive problem. The Colorado River Storage Project had been authorized in 1956. The Congress, no doubt responding to pressures and encouragement from the Executive Branch at that time, imposed more stringent repayment obligations on the Colorado River Storage Project than the Congress had previously required of similar projects.

As spokesman for Interior and the Kennedy Administration, I stated our support for the Garrison Diversion Unit in North Dakota. As a citizen of South Dakota, I personally believed that the early construction of Garrison and the Oahe Unit in South Dakota and the Midstate Project in Nebraska were equally meritorious. I was, and continued to be, convinced that the construction of all three irrigation projects should be expedited to compensate North and South Dakota for the valuable river bottom lands sacrificed to provide downstream flood protection and navigation when three large, multipurpose storage dams were constructed on the Missouri River in South Dakota and one each in North Dakota and Montana. Five hundred thousand acres of valuable river bottom lands were inundated in each Dakota to provide these downstream benefits.

Chairman Aspinall of the House Interior Committee and Chairman Anderson of the Senate Committee (both from Colorado River Basin states) informed me in no uncertain terms early in my tenure that there would be no additional authorizations in the Missouri Basin until the Department of the Interior acted to put the Missouri Basin power project on the same repayment basis as the Colorado River Storage Project. I heard the message. Prior to that time, the Congress had not established precise repayment criteria for the Missouri River Basin Project. I had no option but to comply. The Bureau of Reclamation, under my supervision, immediately began intensive and careful repayment studies of the Missouri River Basin.

In December of 1963, after months of intensive work, I transmitted a comprehensive repayment study to the two Interior Committee Chairmen and their committees. The study had not only been thoroughly scrutinized, but approved by the Executive Branch. Before final transmittal, I discussed the study and its recommendations at some length with the two Committee Chairmen and the staffs to make certain we had met the strict criteria they had enunciated. Later, I testified on the repayment principles to the two Interior committees. The Congress accepted the repayment principles in connection with the Garrison authorization. As a result, the Missouri Basin power project was placed on a repayment schedule similar to, but not identical with, the Colorado River Storage Project. To accomplish this result and keep my part of the agreement, I increased the power rates by 0.25 mills per kilowatt-hour in the eastern division of the Missouri Basin. Many of my rural electric friends in that area did not agree with my actions.

The Congress wrote into law the repayment program for the Colorado River Storage Project when the project was authorized. Likewise, repayment procedures and policies were established for the Missouri Basin Power Project when the

Garrison Diversion Project was authorized in 1964. The policies are fair and reasonable and they are the law. They put in effect a contract between the Government and the project users.

In 1958 I built a new home on my farm near Groton, South Dakota. I financed that house with a Federal Land Bank loan on my farm land. The loan was for 30 years and I pay interest at five percent. The Federal Land Bank has never suggested that I should now pay 14 percent because money has become more costly since I negotiated the loan. The Federal Land Bank is honoring its obligation and I am honoring mine.

The United States has made long-term investments in dams, transmission lines and water distribution facilities with long-term useful life that exceed the repayment schedules. Presumably those investments were financed with long-term Treasury borrowings. The United States must honor its own contract just as the Federal Land Bank Association of Aberdeen, South Dakota has kept its agreement with Ken Holum. I expect the Congress to make certain that those commitments are honored. To do so, you must reject Section 308.

The Congress will remember, I am sure, that the water and power users have agreed to repayment of principal with interest over a specified period of time, but title stays with the Government after repayment. That is a great deal for the Government.

The Federal Government has made a sound investment in hydroelectric storage projects and transmission facilities. The wholesale power rates, in effect established by the Congress when the repayment principles were adopted, have and are making an important economic and social contribution to an agricultural economy that is in severe economic distress. The Holum farm would not have service from an REA-financed rural electric cooperative if Federal hydropower had not been available at reasonable but compensatory rates when the co-op's distribution lines were built in the late 40's.

The Government's projects are doing the job the Congress expected them to do. The Government must keep its commitment and the power users must keep theirs. It is the duty of the responsible administrators to keep power rates high enough -- but only high enough to meet the repayment obligations mandated by the law. It is the obligation of the Congress to make certain that the Executive Branch keeps its part of the bargain.

I respectfully suggest that this Subcommittee delete Section 308 from the appropriations bill and take additional action, as appropriate, to make certain that the Executive Branch honors the good faith commitments made by the Government.

For the Subcommittee's additional information, I attached a copy of my December 17, 1963 letter to Chairmen Jackson and Aspinall, transmitting the Department of the Interior's report entitled "Report on Financial Position - Missouri River Basin Project". The report is still timely.

I appreciate the opportunity to appear before you and for your consideration of the information I have supplied.

Thank you.

Attachment

Today, we are attempting to apply financial "yardsticks" that did not exist at the time decisions were made to construct the major storage facilities and when rates for the marketing of power were first established. Four major changes in financial management have occurred since the Missouri River Basin Project was authorized and construction started.

The most significant and restrictive of these changes is the decision that the repayment goal for all reimbursable costs shall be 50 years after the completion of any division, unit, or feature of the project. The only exception being a development period, of up to 10 years which may be made available for irrigation investments. This criterion has been applied on the Colorado River Storage Project, the Fryingpan-Arkansas Project, Colorado, and other recent major Federal Reclamation project authorizations.

Other changes are: (1) the adoption of the separable costs-remaining benefits method of cost allocation pursuant to interagency agreement of the Departments of the Army and the Interior and the Federal Power Commission in 1954, (2) inclusion of interest during construction as a component of commercial power investment, and (3) abandonment of the accounting concept permitting use of the interest component of power revenues in the repayment of authorized irrigation assistance.

In addition to changes in the field of procedure and criteria, the project has been subjected to a variety of uncontrollable influences that have, in interaction with the foregoing, contrived to accentuate repayment problems. For example, project revenues for the first twelve years of project operation have been only slightly over one-half the amount anticipated for the period. This arises from two causes, namely: (1) adverse water supply conditions and (2) slower than expected installation of generating capacity. Water year 1962 was the first normal water year since 1954.

Prior to undertaking the painstaking financial analysis that is summarized in this report, the Department first considered appropriate opportunities to increase project revenues. Some of the possibilities have matured and are included in the analysis; others hold real promise for increasing project revenues in the future, but have not been considered in the current study.

In the first category, the most significant item is the previously cited Basin Electric Cooperative arrangement, the additional net revenues of $980,000, and other benefits that it provides. In the second category are interconnections between the Missouri River Basin Project system and other Federal systems that are either under construction or receiving careful consideration at the planning level. Transmission lines to interconnect the Missouri River Basin Project with Southwestern Power Administration and with the Colorado River Storage Project are under construction. Studies are in progress of a major connection with the Bonneville Power Administration. The financial benefits to the Missouri River Basin Project from these interconnections will be substantial; however, they are not as yet definite enough to be included in a financial analysis.

There are other areas of potential financial improvement to the project, such as pooling arrangements with the commercial companies and other electric systems of the area, which will be pursued diligently as the opportunities arise.

Although these long-range opportunities exist, it is obviously necessary and desirable to act immediately to establish appropriate and definitive standards for the project's financial management. We have studied the project carefully, testing its financial structure against the criteria employed in projects that have been authorized by the Congress in recent years. Although the criteria recommended are similar to criteria employed in more recent authorizations, they are not identical.

It must be remembered that this project was planned and built under more liberal standards. If 1962 criteria had been applied when the structures were authorized and constructed, we would have a substantially different project with different units and an altered construction schedule.

With this in mind, the study shows that sufficient revenues are in prospect to repay reimbursable project costs in accordance with terms and criteria set forth therein.

The studies are based on the following repayment principles:

1. Interest rates for the return of commercial power investment would be as follows:

   (a) Investments in existing facilities constructed by the Corps of Engineers and Bureau of Reclamation, alike, would return three percent interest from the date of investment to June 30, 1964.

   (b) Unpaid balances as of June 30, 1964, of investments in facilities constructed by the Corps of Engineers would return 2½ percent interest after that date.

   (c) Investments in existing facilities constructed by the Bureau of Reclamation and authorized facilities of the general comprehensive plan on which construction has not yet commenced would return 3 percent interest.

2. Investments in commercial power and municipal and industrial water supply will be returned with interest within 50 years after individual projects, either partly or wholly for production of commercial power and/or municipal and industrial water, become revenue producing.

3. Irrigation repayment assistance associated with units or divisions built or under construction, as of June 30, 1964, will be returned without interest as soon as possible after completion of commercial power payout, and will be accomplished before any power revenues are utilized for repayment of irrigation assistance associated with units, divisions, or irrigation blocks for which construction will not have been initiated on June 30, 1964.

4. Irrigation repayment assistance associated with units, divisions, or irrigation blocks on which construction will not have been initiated on June 30, 1964, will be repaid within 50 years plus permissible development period after such unit, division, or irrigation block becomes benefit producing for irrigation.

Irrigation investment costs cover three distinct types or classifications of physical works. They are: (1) specific facilities for regulation, conveyance, and distribution of water to irrigable lands; (2) regulatory

or replacement storage reservoirs built separately for multiple purposes but affording benefits to irrigation units or blocks; and (3) hydroelectric power facilities reserved for furnishing power and energy for irrigation pumping.

It is significant that the foregoing proposal for repayment of irrigation investment, although consistent with certain older projects, differs slightly from the requirements of other major contemporary Federal Reclamation legislation. For example, in the Colorado River Storage Project the cost of multiple-purpose replacement reservoirs allocated to irrigation is required to be returned within 50 years after completion of the reservoir, whereas the Missouri River basin proposed principles contemplate the repayment of irrigation storage investment concurrently with the repayment of the specific irrigation facilities with which the storage is associated.

The Department of the Interior recommends this procedure in the Missouri basin because irrigation development has lagged so far behind the construction of the storage units and the flood control and navigation works. The major main-stem dams and reservoirs of the Missouri River Basin Project are largely completed; their construction was accelerated for flood control and navigation purposes. Although irrigation storage in these reservoirs will be required ultimately, it is not an immediate requirement. Base flow in the Missouri River could serve irrigation requirements for many years.

Comprehensive utilization of the damsites and the most economic program of development require, however, that ultimate needs for irrigation storage be recognized and that the purpose be provided for in the designs. Accordingly, substantial investment costs in irrigation storage and pumping power facilities have been made for the ultimate benefit of irrigation undertakings that are not yet in being and will not be revenue producing, in certain cases, for many years.

Interest rates for the amortization of commercial power investment is the most significant variable in the financial equation, and is thus of critical importance to the financial posture of the project. The rate structure used in current studies makes use of 2½ percent interest for return of the unpaid balance of commercial power, as of July 1, 1964, in facilities constructed by the Corps of Engineers during the period 1944 to 1964; and for the return of unpaid balances in transmission and marketing facility investment relating to these plants. This rate structure recognizes that other major Federal power systems in which the Department of the Interior markets power from Corps of Engineers powerplants utilize 2½ percent interest.

Significantly, these systems--Bonneville Power System, Southwestern Power Administration System and Southeastern Power Administration System--market power under statutory authority that permits administrative discretion in the establishment of interest rates insofar as Corps of Engineers investments are concerned.

The Department of the Interior believes that to continue to charge three percent on these investments, as compared to 2½ percent charged elsewhere, discriminates against the Missouri River basin. This being so, it seems appropriate that steps be taken to give the area the benefit of the same interest criteria that has historically been applied elsewhere.

In addition to approval and adoption of the foregoing precepts, the study shows that system revenues must be increased by approximately $1,500,000 annually or an average of 0.25 mills per kilowatt-hour of marketable firm commercial power applied to the Eastern Division only. To accomplish this increase in revenues, power rates will need to be adjusted so as to achieve a return approximately 5 percent greater than the yield under the Eastern Division existing rate structure. The Department of the Interior is prepared to initiate such rate changes under existing administrative authority.

The financial studies have been carefully made. The standards employed and recommended are consistent with current Congressional policies, taking into account the inherent differences between projects and the fact that this power project was substantially completed before the standards were applied. We recommend that Congress accept the report and take appropriate action so that the remaining units may be authorized and constructed on a timely and orderly basis.

Careful consideration of the foregoing matters suggests that legislation be sought to authorize the use of the interest rate criterion which has been used in current analyses and which has been described in detail herein. More specific recommendations in this regard will be made in a separate communication at an appropriate future occasion.

Sincerely yours,

ASSISTANT Secretary of the Interior

STATEMENT OF GA TECHNOLOGIES, INC.

I am Kerry D. Dance, President, GA Technologies Inc. I appreciate your providing me this opportunity to testify before your Committee on the progress made during the past year on four energy development programs in which GA is actively participating and to offer our recommendations on funding and future program direction.

HTGR PROGRAM

GA is the principal contractor and proponent on the Department of Energy's HTGR design and development program and continues to be enthusiastic about the technical merits of HTGR's and over the prospects for the concept to make a major contribution to our future national energy picture. The vitality and progress of the program during this past year is reflective of the cooperation and contribution made to the HTGR program by all of the major program participants including Combustion Engineering, General Electric, the Bechtel Group, Stone and Webster Engineering Corporation and Oak Ridge National Laboratory and, in particular, Gas Cooled Reactor Associates (GCRA), the utility/user organization who provide to the program the current perspective and requirements of the ultimate user of HTGR systems.

GA's long standing relationship with Hochtemperatur Reaktorbau (HRB) and NUKEM in West Germany are also important to the program. These relationships and the associated commercial agreements have allowed the experience of the gas cooled reactor programs in the Federal Republic of Germany to be brought to bear on the U.S. HTGR program.

The work on the Department of Energy program during the past year has concentrated on detailed considerations of several smaller HTGR nuclear systems and overall plant configurations which could meet the criteria that were established by the program participants. The preferred concept has been identified by the participants as the U.S. design of a steel vessel modular HTGR. Each individual module would have a power output of 250 to 350 MW(t) and a reference plant concept would consist of multiples of these modules coupled to a turbine generator. Each of the modules would incorporate a reactor core of HTGR-TRISO coated fuel particles in a graphite matrix. The physical dimensions and the power density of the core are determined by the requirement that, even under hypothetical conditions the nuclear afterheat can be transferred by inherent conduction and/or radiation to totally passive heat removal systems. The fuel particles would not reach temperatures which would cause significant fission product release from the coated particles. Radiation levels would be at a low level such that consideration of evacuation plans within the user's emergency planning, would not be required. We believe this is a key factor in gaining public acceptance of nuclear power. Moreover, the user's investment would not be jeopardized.

Assuming full credit is obtained from the licensing authorities for these features, considerable simplification of the total plant would be obtained since all of the nuclear requirements would be localized within a specific area of the plant and the balance of the electricity generating plant could be built according to conventional construction standards. This separability factor, coupled with the ability to factory-fabricate the majority of the nuclear system, would lead to significant reduction in overall plant costs. The work to date has indicated that the multi-module 400 MW(e) plant can be made to be competitive under these assumptions.

Recognizing that the key assumption is licensability, of the the participants in the program have proposed that the most logical approach to proving the principle would be to carry out a Licensing and Technology Test project leading to a licensability certificate from the NRC. The commitment to a project would also nurture the development of private sector support.

GA recommends that such a Licensing and Technology Test project should be designated as a goal of the HTGR program as soon as possible. We would also recommend that the level of funding for the HTGR design and development program activities for FY '86 be maintained at a level of $34.6 million plus $1 million for capital. This program level would permit the program to progress at a cost effective pace, permit significant licensing activities and the early initiation of Title I design activities for a LTT project.

THORIUM RECYCLE

The Spent Fuel Treatment Program, under the direction of the Oak Ridge National Laboratory, has been an integral part of the National HTGR program which has been supported and funded by your Committee for many years. The information from this activity which focuses on the requirements, technology, and costs associated with the handling, transportation, processing and storage of discharged fuel is vital to the overall consideration of HTGR reactor systems.

The fuel cycle for the modular HTGR designs utilizes low enriched uranium (LEU) fuel of approximately 20% enriched U-235. Management of the spent fuel for modular HTGRs on a once-through fuel cycle involves shipping and storage activities in various sequences prior to packaging and ultimate disposal of the HTGR spent fuel in a geologic repository. The cost of managing these back-end fuel cycle activities can be favorably impacted by the application of spent fuel treatment process technologies currently under development in the United States and the Federal Republic of Germany. Many of these processes have been jointly developed in a cost effective manner under the U.S./FRG cooperative program. In particular, volume reduction of HTGR fuel, which involves the removal of the graphite matrix from the fuel, produces a spent fuel in the form of TRISO-coated particles. These spent fuel particles are fully compatible with repository packaging and storage requirements. GA believes that the continued cooperative development of the spent fuel treatment processes is important to the overall HTGR effort and recommends maintaining support at a level of $3M in FY '85.

NRC HTGR SAFETY

Interactions have begun with the NRC to establish an HTGR Licensing Plan which appropriately covers the unique characteristics of the modular HTGR concept. GA believes that efforts within the NRC should be focused on activities identified in this HTGR Licensing Plan. It is the intent of the DOE HTGR program to initiate preliminary design activities for the Licensing and Technology Test Project and therefore the NRC activities should include activities which are specifically oriented to satisfying the needs of the project. These would include development of criteria specific to HTGR's, selection of licensing bases events, and concept design review. Technical issues arising as a result of uncertainties relating to top-level regulatory criteria compliance should be identified and the necessary research activities should be planned. It is our recommendation that a budget level of $2 million be maintained for these activities in FY 1986.

With regard to NRC activities we would also remark that action is required to issue an Advanced Reactor Policy Statement that will provide a stable policy and budget framework within the NRC and the Advanced Reactor Group within NRR. A draft statement has been in review within the NRC for over a year and should be finalized.

MAGNETIC FUSION PROGRAM

GA Technologies has accumulated the broadest base of experience in magnetic fusion of any industrial concern in the world. Paralleling the history of the field, GA's involvement in fusion research progressed from primitive benchtop experiments in the 1950's and 1960's to today's sophisticated devices that themselves are an important driver of advanced technology.

The FY 1986 Magnetic Fusion Energy Budget submitted is the minimum level required to keep the program logic intact. Continuing to make progress in the face of two consecutive cuts from the FY 1984 budget level is reflected in two new elements of program strategy embodied in the Magnetic Fusion Program Plan. The first is a reduced emphasis upon future large facilities which simultaneously serve major scientific and technological missions. This is exemplified by the present conception of the burning plasma experment, where the technology is regarded as subservient to the scientific mission and the cost constraints.

The second new element of program strategy is increased reliance upon international cooperation. GA believes that reliance upon international cooperation should not extend to abrogating technical responsibility in any of the research areas that are critical to the fusion energy option. We may choose to accomplish individual program steps via joint ventures but we must remain self-reliant in all the key scientific and technological disciplines. The burning plasma experiment is a natural candidate for international cooperation. The United States must take the initiative in such a venture, however. The preferred approach is to commit to such a project and bring in partners to expand the program scope.

There is remarkable parallelism between the existing program at GA Technologies and the program structure embodied in the new Magnetic Fusion Program Plan. Our largest program element is Doublet III, now in the midst of conversion to DIII-D, a large D-shaped tokamak. DIII-D will play a pivotal role in preparation for a burning plasma experiment. The search for the optimal magnetic geometry is the major GA program focus, both through DIII-D and through OHTE, a confinement idea recently pioneered by GA that has already had a number of significant experimental successes. Although less seasoned than the tokamak approach, OHTE shares with other high power density approaches the advantage of a shorter product cycle. Thus, advances in the science could trigger major program strides in a relatively brief period. It is to be noted that OHTE has been supported entirely by private funding and thus accomplishes directly the technology transfer objective espoused prominently in the Magnetic Fusion Program Plan. Further evidence of the similarity between the GA program and the blueprint for the national effort is the agreement with the Japan Atomic Energy Research Institute for joint research on Doublet III as the largest cooperative fusion venture yet undertaken by the United States.

In summary, GA believes that by following the strategy outlined in the Magnetic Fusion Program Plan, a high quality, productive research program can be conducted at the budget level submitted. Your continued strong support of the magnetic fusion program is greatly appreciated.

SPACE NUCLEAR POWER

The Space Nuclear Power (SP-100) Program is in the third year of conceptual design and technology development that has shown that in-core thermionics systems can meet all mission requirements in power ranges from a few kilowatts to several megawatts. This work confirms the conclusion from the AEC/NASA program of the 1960's and early 1970's that the unique features of thermionic technology make it the best choice for space application. These features are a high heat rejection temperature, low coolant temperature, and a building block thermionic converter. These result in a space power system that is most survivable, smallest in size and weight, and lowest risk to develop. A 5-year ground engineering program will begin in 1986 to develop reliable systems that could be deployed in te 1990's. The $4.8M appropriated in 1985 for thermionics technology development has been used by GA, Thermo Electron and Rasor Associates to reestablish manufacturing and testing expertise and to begin testing full-size thermionic cells in the GA TRIGA reactor to demonstrate the long required lifetime.

The FY-86 SP-100 program does not include funds for continuing the basic thermionic technology program. GA believes that technology development beyond the requirements of the SP-100 program should be continued, and recommends a funding level of $2.9 million for this

effort. The funds would be directed to significant advances in the technology beyond that required for SP-100. Specifically, the FY-86 program would focus on converters intended for long-term operation at temperatures around 2000° K (substantially above the levels considered for SP-100) in order to significantly increase converter power density and efficiency. The activities would also include the development of higher temperature insulators, structured emitters and collectors, additive oxygen effects and more effective electrode compositions. This work will provide the necessary technology springboard for multimegawatt burst power missions in space.

SMALL MILITARY POWER PLANT

The TRIGA Power System (TPS) was conceived by GA Technologies (GA) to provide a compact, modularized, inherently safe, and reliable power supply, suitable for small stand-alone, secure or remote power generation. The TPS combines two well-established and ideally-suited technologies. GA's highly successful TRIGA research reactor and the Organic Rankine Cycle (ORC) for highly reliable power generation. During the past two years GA Technologies, together with its subcontract team members - Chicago Bridge & Iron, Gilbert/ Commonwealth, and Mechanical Technology - have made a substantial commitment of our own funds to develop the TRIGA Power System (TPS) design for defense terrestrial applications. This team, with GA as prime contractor, has just completed a five-month conceptual design study for the Department of Energy on a 10 MWe TPS as a candidate for the Secure Military Power Plant (SMPP) project. Based on this work, we believe that a small, independent and secure nuclear power plant such as the TPS can have competitive life-cycle costs.

GA, therefore, recommends that design work on the SMPP should be continued during FY '86 leading to construction at INEL of a prototype SMPP to demonstrate the economic and operational characteristics of the reactor concept. Such a prototype could be utilized for training of the operating and maintenance personnel required for Secure Military Power plants deployed in the future. We would recommend that the level of funding for these activities in FY-86 be $4 million.

Thank you for the opportunity to present our views on these programs.

STATEMENT OF ALLEN M. BARNETT, PROFESSOR, ELECTRICAL ENGINEERING DEPARTMENT, UNIVERSITY OF DELAWARE

Summary of Request

The addition of a semiconductor device design and development component to the present thin-film materials research program is recommended. Semiconductor device designs, similar to those used by the microelectronics industry, would be tolerant of faults in the photovoltaic materials and accordingly would not require perfect materials. A few promising photovoltaic materials should be examined for new device designs including thin-film crystalline silicon, GaAs and possibly one from the current materials research program. An additional $2,500,00 is recommended for this activity.

It is also recommended that Federal Government purchases of new electricity generating capacity consider photovoltaic electricity where it is cost effective on a life cycle basis. The Government is a major purchaser of electricity generating equipment. Often diesels are specified in situations where photovoltaic generated electricity is acceptable. Some efforts to include photovoltaics in these electricity generation purchases must be made. A 5% set-aside on new stand-alone electricity generation purchases for renewable electricity is recommended.

Testimony for the Record

My thoughts and suggestions on the photovoltaic solar cell program are based on my experience in product development. This experience includes the management of an electronic component company and product development at the General Electric Company.

I am the General Chairman of the 18th Institute of Electrical and Electronics Engineers Photovoltaic Specialists Conference, the largest photovoltaic professional conference in the world.

I am concerned that the excitement with the technology and the business opportunities which is enjoyed by the professionals in the field is not realized in Washington. In contrast, the view from the Government appears to be one of discouragement.

The drastic decline and current austerity of the photovoltaic budget has led to substantial decreases in:

a) Innovation
b) Small business participation
c) University participation
d) Technology transfer

It is only natural that the good program managers at the Department of Energy protect their best big programs (which are also shrinking). There have been continually reduced opportunities for innovative new programs.

The United States Photovoltaic Program has been the world leader in the development of innovative new ideas for this market which is rapidly growing from several hundred million dollars to more than $1 billion by the end of this decade and $10 billion by the year 2000. As the U.S. research program is reduced in size and effectiveness, the market share is being lost by U.S. companies.

> U.S. developed technology is fueling the growth of international companies. These international companies are now leading in specific technology areas. Clearly, the problems of off-shore competition in the U.S. semiconductor industry are now being experienced by our photovoltaic companies who are not yet well enough established in the market to fight this competition without Government assistance.

Following are some suggestions:

1. Add a semiconductor device, design, and development component to the current materials research program.

A semiconductor device approach is based on new designs which lead to improved solar cell performance without requiring perfect materials. It is device design and innovation which fueled the semiconductor electronics industry, including Intel, Texas Instruments and many successful innovative small companies. This high technology industry growth was fueled by strong support of academic research.

An example of the type of innovative device design opportunity which does not fit in the current program is thin-film crystalline silicon. The opportunity comes from new device designs which do not require perfect silicon sheet materials. The current thin-film materials research program does not include crystalline silicon. The advanced silicon sheet is focused on wafer quality materials and also excludes device design based on less than perfect new materials.

The thin-film silicon problem will require some innovative new approaches, most likely in the device design area. The solution of this problem and many other similar high risk, high payoff approaches can lead to a true breakthrough in the cost/performance standard.

Adding device design to the current program can lead to substantial new opportunities.

2. Require that Federal Government purchases of new electricity generating capacity consider photovoltaic where it is cost effective. The Government is a mojor purchaser of electricity generating equipment. Often diesels are specified in situations where photovoltaic generated electricity is acceptable. Even a small 5% to 10% set-aside for renewable electricity would represent major progress. Once experience is gained of photovoltaics further government market penetration will follow.

For example, the Voice of America is planning to purchase 1.5 billion watts of new diesel generators. Life cycle costing favors photovoltaics for many of these applications. Dielel generators have a lower capital cost.

In addition the Government should consider adding photovoltaic water pump systems to the list of preferred exports for agricultural assistance to less developed nations. It is clear that photovoltaic water pumps can have long term beneficial impact. These benefits can be realized by allocating a small fraction of the funding currently reserved for food exports and other agricultural assistance.

3. Across the board raids on the current photovoltaic research budget must be avoided.

If new projects are to be funded, separate funds must be allocated. There is no more room for further decreases in the research budget.

The creative energies of U. S. technology can lead to technological and market dominance of this new high technology, rapidly growing industry. Limited encouragement and assistance by the Government can be a very effective catalyst.

STATEMENT OF SOUTHWESTERN POWER RESOURCES ASSOCIATION

The proposals of the Office of Management and budget for massive increases in the rates charged by the Southwestern Power Administration (SWPA) and the other power marketing administrations of the Department of Energy have no sound economic basis, represent the abandonment of commitments made by the Federal Government, single out one class of electric consumers for the imposition of a tax on their bills and are a continuation of the outrageous OMB attack on rural America. The OMB proposals should be rejected.

In the case of SWPA, the OMB would hit electric consumers of rural electric cooperatives and public power systems with an increase that would total $272,000,000 over the next five years - if one believes the OMB interest rate projection of only 6% by 1990. The amount of the increase is clearly understated. No responsible financial projection forecasts 6% interest rates by 1990.

These hugh increases would largely be the result of the OMB proposal to calculate the interest on the unamortized federal investment at current rates paid by the government on new borrowing rather than on the rate paid at the time of project construction when the funds involved were borrowed. In addition, OMB would impose straight-line amortization in place of the longstanding current policy that costs be repaid over a 50 year period but not on a rigid schedule. The current repayment policy allows for the flexibility needed for rate stability in marketing hydro electric power because of the great swings in rainfall from year to year.

The current repayment policy that interest rates charged on power development are based on the cost to the govenment of borrowing the money at the time project construction actually began is fair to both the government and the consumer. To charge current cost of borrowing or what it will cost next year, long after the original investment, bears no relationship at all to actual costs.

Summary of Changes to the Rate Making Procedure:

1 - Straight line amortization of all unpaid investment and interest expenses in place of amortization based on hydologic conditions.

2 - Current interest rates (as paid by the Treasury Department) will be applies to all unpaid investment in computing interest expenses in place of project interest rates established at the time of initial appropriations for construction.

Financial Changes ($ millions):		1986	1987	1988	1989	1990
SWPA Current Revenue	$	91.5	91.7	91.7	91.7	91.7
OMB Revenue Increase	$	71.0	67.0	61.0	44.0	29.0
OMB % Increase		78.0%	73.0%	67.0%	48.0%	32.0%
Assumed Interest Rates - OMB		11.25%	10.5%	9.75%	7.75%	6.0%
OMB Revenue Increases:						
By Straight Line Amortization	$	7.0	7.0	8.0	7.0	5.0
By Current Interest Rate		64.0	60.0	53.0	37.0	24.0
Total Increase	$	71.0	67.0	61.0	44.0	29.0

Effect on Rates (1986) mills/kwh:	Current	OMP Proposal	%Increase
Peaking Power (98% of sales)	27.7	49.0	77.0
Load Factor Power (2% of sales)	14.6	26.0	78.0

Power Allocations by State	Contract Demand (kw)	%
Arkansas	376,000	18
Kansas	177,000	8
Louisiana	178,000	8
Missouri	676,000	32
Oklahoma	408,000	20
Texas	203,000	14
TOTAL	2,108,000	100

COST TO SWPA CUSTOMERS OF OMB PROPOSALS -

ASSUMING OMB INTEREST RATE PROJECTIONS

ARK	$12,780,000	$12,060,000	$10,980,000	$7,920,000	$5,220,000
KAN	5,680,000	5,360,000	4,880,000	3,520,000	2,320,000
LA	5,680,000	5,360,000	4,880,000	3,520,000	2,320,000
MO	22,720,000	21,440,000	19,520,000	14,080,000	9,280,000
OKLA	14,200,000	13,400,000	12,200,000	8,800,000	5,800,000
TX	9,940,000	9,380,000	8,540,000	6,160,000	4,060,000

INDIVIDUAL STATE TOTALS:

Arkansas	$48,960,000	Kansas	$21,760,000
Louisiana	21,760,000	Missouri	87,040,000
Oklahoma	54,400,000	Texas	38,080,000

TOTAL OF SIX STATES: $272,000,000

The depressed state of our region's rural areas is due in part to high energy costs and low prices for agricultural products. Most rural and small town electric rates in this region are higher than in surrounding urban areas. A 78% increase in power costs - from whatever source - would further aggravate an already serious problem. The availability of Federal power is meaningless if it is priced beyond the ability and/or the willingness of rural electric cooperatives and municipal electric systems to continue as customers of SWPA. All prospective purchasers would be driven away by such an inflated price.

Priced at 4.9 cents/kWhr, Federal power would be more expensive than power generated from numerous other fuels. Alternative conventional power sources are readily available - in fact there is a current surplus - which could easily substitute for Federal power priced at 4.9 cents/kWhr.

The consequences of an unnecessary forced switch of SWPA's customers to other power sources are all bad:

- Power costs to rural and small town consumers are needlessly increased.
- A nonpolluting power source is replaced by coal, gas, oil or nuclear fired power.
- SWPA power revenues decline rapidly to levels lower than needed to repay the Federal investment in power facilities in this region.

- An efficient, successfully managed Federal program - one of a very few to return revenues to the government - would be severely damaged.

There are compelling reasons other than those mentioned above to reject the OMB proposals. When Federal power in this region became available 40 years ago, it was more expensive than conventional power sources. This was particularly true of gas-fired power, then the predominant fuel for electric generation.

However, rural electric cooperatives and municipal electric systems agreed to become SWPA customers because of difficulties with investor-owned power companies and the expectation that someday Federal hydro would become a less expensive power source relative to gas, coal or other sources. These systems thus provided a market for Federal power during several years when other power sources were less expensive, taking a calculated risk that their consumers would receive long term benefits. Moreover, in the last five years SWPA customers have supported a 73% increase in rates so that current revenues are sufficient to amortize the Federal investment in power facilities.

It is hard to understand why SWPA power rates should now be raised, as OMB desires, to a level higher than other power sources. Unlike 40 years ago, there is likely to be no buyers for Federal power priced at such levels.

The long term commitment of rural and small town consumers to the Federal power program is not really different than the investment of private power companies over many years in various facilities. Yet, no reasonable person has proposed a drastic increase in the rates based on older, cheaper power facilities used by investor-owned companies.

A single class of electric consumers has been targeted by the OMB for the imposition of an unwarranted tax. Would a home owner with a fixed rate mortgage be treated fairly if, years after the loan was issued, the lender imposed current rates because the lender's costs had increased?

The end result of such a massive increase in Federal power rates as proposed by OMB would be: A) another burden on an already depressed rural economy and B) a very real probability that Federal power revenues in this region, rather than increasing would decline rapidly, falling far below amounts necessary to amortize the Federal investment in power facilities in this region.

The unreasonable and unthinking nature of the OMB budget proposal was underscored by the crude and insensitive remarks about rural America uttered by OMB Director David Stockman in attempting to explain his budget to the Senate Energy Committee on February 5th. Subsequent OMB statements have attempted to downplay the effects of the proposed $272,000,000 tax. Perhaps this is a small amount to an agency accustomed to submitting budgets to the Congress with $100,000,000,000 - $200,000,000,000 deficits. The OMB tax is, however, a very significant issue for rural and small town utility systems. This OMB rate increase will become effective October 1, 1986 if Congress approves the directive language included in the Administration's F.Y. 1986 budget proposal. We urge your rejection of the OMB proposal to tax rural and small town electric consumers.

Southwestern Power Resources Association is a regional organization of 165 rural electric cooperatives and 75 municipal electric systems in the six states of Arkansas, Kansas, Louisiana, Missouri, Oklahoma and Texas. Our members are customers of SWPA and serve over 5 million rural and small town electric consumers.

Statement of Northwest Iowa Power Cooperative

My name is Philip A. Hanan. I am the General Manager of Northwest Iowa Power Cooperative, also known as NIPCO, which is a Generation and Transmission Cooperative serving ten rural electric distribution cooperatives and one municipal electric cooperative in western Iowa. These eleven cooperatives distribute electric power to approximately 28,800 consumers covering all or parts of twelve counties in Iowa adjacent to the Missouri River. This testimony is presented on behalf of the entire NIPCO Family - all 28,800 consumers.

NIPCO currently purchases approximately forty-six percent (46%) of its power needs from the Western Area Power Administration (WAPA); forty-eight percent (48%) from Basin Electric Power Cooperative and the remaining six percent (6%) is generated from NIPCO's 9.027% ownership in Neal 4, a coal fired generating plant located on the Missouri River, south of Sioux City, Iowa. We estimate these percentages in 1986 will equate to 45% from WAPA; 45% from Basin and 10% from Neal 4.

If the Office of Management and Budget (OMB) directive relative to increasing the cost of power from the Power Marketing Associations is allowed to be placed in effect it will have a devastating effect on NIPCO, its Class A Member Cooperatives and their 28,800 consumers because these consumers are all rural or small townfolk, not urban or suburban, and all are victims of the disastrous farm economy which has played havoc and is continuing to play havoc with the general well-being of the rural citizens in our area.

Our calculations show the following statistics projected for 1986:

1.	FY 1985 rate for WAPA power -	6.81 Mills
2.	Original FY 1986 rate for WAPA power -	9.41 Mills
3.	OMB revised FY 1986 rate for WAPA power -	16.22 Mills
4.	Present NIPCO annual cost for WAPA power -	$1,722,000
5.	Original FY 1986 NIPCO annual cost for WAPA power-	$2,176,800
6.	OMB revised FY 1986 NIPCO annual cost for WAPA power -	$3,898,800
7.	Percent increase if OMB proposal allowed to be placed into effect -	126.41%
8.	Present NIPCO total annual power cost -	$24,298,000
9.	NIPCO total annual power cost with OMB FY 1986 rate -	$26,474,800
10.	Percent increase to Class A Members of NIPCO if OMB proposal allowed to be placed into effect -	8.96%

Iowa state income tax collections for the period when most farmers pay their income taxes dropped 30% this year compared with 1984. The $12 million slump is additional evidence of Iowa's rugged farm economy. There is great erosion in the general economy in our state, the movement is currently not in a positive direction and this appears to be just the beginning. The number of farmers who paid income taxes is down this year, as is the average amount paid by those who did report income.

The two states of Iowa and Nebraska also have the dubious distinction of incurring more recent bank closings than anywhere else in the nation.

It seems preposterous that at a time when agriculture is beset by depression conditions, unseen since the thirties, that this Administration would seek to find additional ways in which to ask agriculture for more money from the rural area to help offset the national debt.

There could be big trouble where local economies have been built with reliance on federal power. Rate shock dictated by the Administration's proposed policies will make energy intensive industries uncompetitive, force closures and relocations, increase product prices, and increase worker layoffs.

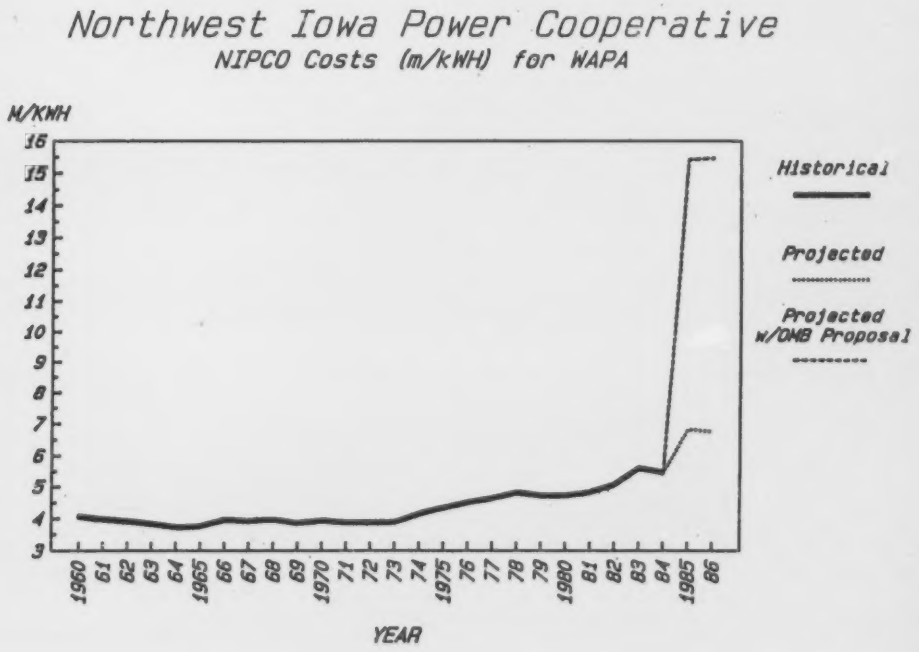
There will be those experts and others who will argue that a 6% to 9% increase in cost of power is a tolerable situation and is not as bad as other facets of our economy. We refute this statement from the viewpoint that 6% to 9% is a greater percentage cost increase than the percentage of

farms which are predicted to "take bankruptcy" in 1985. If these additional power costs are allowed to proceed as the OMB proposal would dictate, additional farms will undoubtedly follow the bankruptcy route. These farmers and residents of small towns in western Iowa cannot take any additional cost increases in their present economic structure.

We respectfully urge our Nation's legislative leaders to vigorously oppose this OMB scheme for increasing the price for preference power and allow the method of determining these costs to remain as they presently are.

The attached graph illustrates the dramatic affect the astronomical cost increase proposed by OMB would have on NIPCO's 1986 operations.

Thank you for this opportunity to present the thoughts of 28,800 western Iowans in opposition to the OMB proposal to increase the cost of WAPA power from the Pick-Sloan Missouri Basin Program.



STATEMENT OF COMMONWEALTH EDISON CO.

Introduction

My name is Wallace B. Behnke, Jr. I am Vice Chairman of Commonwealth Edison Company located in Chicago, Illinois. With nine large nuclear units in service and three more under construction and scheduled for completion over the next three years, our Company is the nation's largest nuclear power plant operator. As such, we have long had a deep interest in research and development of the liquid metal fast breeder reactor (LMFBR). Along with the Tennessee Valley Authority, you may recall that we had a leading role in the Clinch River Breeder Reactor Project. My own involvement with breeder reactor research and development spans nearly 20 years. For the past 12 years, I have served as Chairman of the Board of Project Management Corporation, the non-profit entity established to represent the utility industry's interest in the project. I am a member of the Board of Governors of Argonne National Laboratory, the National Academy of Engineering and the American Nuclear Society, a Fellow in the Institute of Electrical and Electronic Engineers, a director of the Atomic Industrial Forum and a Registered Engineer in the State of Illinois. This statement is submitted on behalf of Commonwealth Edison Company.

Synopsis

Those of us responsible for the nation's electric power supplies believe the U.S. should continue to maintain the strongest mission-oriented national breeder R&D program possible in light of the nation's current economic and strategic priorities, in order to assure the availability of reliable and cost-effective supplies of electricity from a diversity of indigenous energy resources in the next century and beyond. The program should reflect the current realities, build on past accomplishments, and involve expanded collaboration with similar overseas programs, especially in areas such as large scale demonstration where the U.S. program is currently deficient. At

the same time, advantage should be taken of the window of opportunity afforded by the expected improvements in the light water reactors and the slowdown in deployment of civilian nuclear power in the U.S. to update the earlier in-depth assessments of the alternative reactor systems currently under development along with their fuel cycles. Meanwhile, R&D should be directed toward exploring significant innovative improvements to the LMFBR and other candidate systems, with the objective of preserving the billions of dollars and decades of effort already invested. This also would provide the strongest possible basis for reaching a national consensus on a new high confidence strategy for developing those reactor concepts judged to stand the best chance of successful licensing and application on the nation's electric power systems early in the next century and on which joint government and industry resources should be concentrated beginning in the 1990s.

Background

Despite the general decline in overall energy use over the past decade, the demand for electric power continues to grow. This is the inevitable consequence of economic growth and the pursuit of other high-priority national policy objectives related to the nation's strategic and economic well being. More than ever before the subtle and increasingly pervasive importance of a reliable, economic and clean supply of electricity is emerging as the major thread in the fabric of our industrial society and an essential element in the health and safety of the public. Timely investment of capital in electric utility plant is recognized as one of the most direct, flexible, economic and environmentally acceptable options for making the transition away from today's heavy dependence on foreign oil and diminishing domestic oil and and natural gas supplies toward utilization of our vast indigenous resources of coal and uranium. These are among the considerations underlying the strong national incentives both here and overseas for development of an option for the long-term of a clean, and

virtually inexhaustible energy resource for electric power production whose technology and economic potential are virtually assured.

It follows that the adequacy and cost of electric power as well as the financial integrity of the electric utility industry demands a high confidence national strategy that is technically sound and economically affordable, is founded on a consensus among government, industry and the public, and is implemented through cooperative commitments among all three sectors to carry through for both the near term and the longer pull.

R&D Strategy

A critical element in any such strategy is research and development on broad range advanced energy conversion technologies, which are applicable to the generation of electric power, and especially those which have potential for more economical and efficient utilization of our vast indigenous coal and uranium resources. The objective of the research should be to provide the experimentally confirmed information necessary to realistically winnow down the list to only the most promising candidates to which the nation can afford to commit the large financial and manpower resources required for more in-depth development, demonstration and ultimate deployment in the nation's energy economy. Any such strategy must involve both government and industry with responsibility shifting from government at the R&D end of the spectrum (when the outcome is too speculative or distant to attract venture capital) to industry at the deployment end (when market forces can be relied upon to serve the public interest). The magnitude of the resources and time-scales required for the research, engineering scale-up, confirmatory prototype testing and demonstration in an integrated plant configuration calls for taking the fullest advantage of our experience with the demonstration and commercial deployment of the

light water reactor system and expanding our collaboration with relevant overseas R&D to the extent consistent with other national interests.

As the ultimate users of advanced energy conversion technologies, the nation's electric utilities (both privately and publically financed) have a key role in the implementation of this aspect of national energy policy. It follows that their interest will be limited to those technologies for electric power generation that can lower costs, reduce environmental impact, and provide greater access to a diversity of indigenous fuel resources on a competitive basis. To this end, it is appropriate that utilities be allowed by their Public Utility Commission's to utilize some fraction of utility operating income to further the transfer to the private sector of those advanced technologies developed in government sponsored R&D programs which are shown to be ready for demonstration to confirm the economical potential for ultimate commercial deployment on the nation's electrical power systems.

As you may recall, this was the strategy successfully employed by the U.S. Atomic Energy Commission (AEC) during the several decades following World War II to exploit the potential of fission energy through a wide diversity of reactor types applicable to electric power production. Through the AEC's Power Reactor Demonstration Program, development efforts were initally focused on the light water reactor and later broadened to include a number of reactor types. In furtherance of this strategy, Round III of this program, initiated in the late 1960s, selected the LMFBR for further development in response to a broad consensus within the industrial and scientific communities, that of the alternative advanced reactor systems then under consideration, this technology was the most promising candidate for further development, demonstration and ultimate deployment within the forseeable future.

After evidence was presented to satisfy the utilities that the technology was ready for demonstration, agreement was reached to jointly proceed with the Clinch River Breeder Reactor Project (CRBRP) and the project was authorized by Congress in 1972. In 1983, Congress declined to appropriate further funding for the CRBRP and the project was terminated. While falling short of its ultimate goals, the project contributed substantially to the understanding and development of LMFBR technology and reinforced the confidence here and abroad in the licensability and ultimate applicability for the production of electric power in the utility environment.

Today, more than ever before, the LMFBR is regarded here and abroad as the leading advanced technology candidate for providing a long-term, reliable, economic and environmentally sound supply of energy for the production of electric power. A number of other nations continue to assign the highest priority to its development. Limited fossil fuel supplies, along with environmental constraints, make it inevitable that practical application of the breeder reactor will eventually be needed. Only the timing is in question. Failure to maintain consistent support of research and development on this and other promising advanced energy options could impair our economic well-being and national security in the future. Recognizing this and the program's record of technical success, Congress made it clear in the legislative history concerning its action on CRBR that it was not repudiating its quarter century commitment to the strong mission-oriented program for development of the breeder which as you know, our industry has long supported as an essential element of domestic and international energy policy. Congress also called on the Secretary of Energy to develop a modified base program to continue vital breeder reactor development in the absence of a U.S. demonstration project in the forseeable future.

Current Realities

The sharp reduction in the growth of electricity demand

following the 1973 oil embargo has resulted in electric generating reserve margins which currently exceed planning minima in many areas of the country. Considering the number of large nuclear generating units nearing completion, it is reasonable to expect these margins to remain generally adequate in most areas of the country until the early 1990s although some localized shortages may occur even sooner. Given the long lead times for new central station generating facilities -- both coal-fired and nuclear, commitments for new capacity will have to be made beginning as early as the late 1980s even with continuing conservation and additional importation of Canadian power.

Viewed from a national policy perspective, today's seemingly comfortable reserve margins do not warrant the public's complacency about the sufficiency of electric power, especially given the potential for abandonment of several financially troubled nuclear power plant projects and the potential limiation on coal-fired generation attending the concern over acid rain.

Those of us responsible for the nation's electric power supplies have good reason to be concerned. In today's political environment, there is danger of the mistaken judgment being made that the nation can afford to curtail energy R&D in response to near-term social and economic priorities, especially those technologies such as the LMFBR, which are regarded as logical follow-ons to our massive investments in the LWR.

There is little doubt that development of the LMFBR will continue overseas regardless of the pace at which the U.S. program proceeds and that breeder reactor systems will be deployed in those industrial nations which lack indigenous uranium resources before they are needed in the U.S. However, our ability to take advantage of these overseas developments will depend upon continuation of a strong mission-oriented base R&D program, which involves the electric utilities and their suppliers, and which takes advantage of increased colloboration with overseas demonstration programs.

Apart from the government's stake in the integrity of the nation's electric power supply, there is ample justification for continuance of the mission-oriented base R&D program involving greater overseas collaboration. Predominate among today's global concerns is the need for adequate international controls and safeguards on nuclear fuel cycle activities. The international system of nuclear material safeguards, which was developed around the Non-Proliferation Treaty and is administered by the International Atomic Energy Agency, was founded on the premise that U.S. nuclear technology would be made available to nations who agree to submit to international inspection and control. The U.S. will find it difficult to remain a credible participant in the international non-proliferation community unless it maintains a vigorous LMFBR R&D program. By the same token, a significant cutback in this base R&D program would undermine the effectiveness of the IAEA and increase the risk of horizontal proliferation.

Program Redirection

Following the cancellation of CRBRP, it became clear that the breeder reactor base R&D program would have to be redirected in light of the new realities with substantially greater international collaboration than in the past. It should not be surprising that the consensus that led to CRBR has become diffused and there is no longer a public sense of urgency for pursuing advanced energy development. It follows that a new national consensus will be needed if the U.S. is to continue its leadership role in advanced reactor R&D. A new national consensus will undoubtly require an updated assessment of the LMFBR against other alternatives, which reflects our experience in commercial deployment of the LWR and takes account of the technological developments both here and overseas over the past decade.

The slow down in the deployment of civilian nuclear power in the U.S. affords a window of opportunity to make such an

updated assessment without putting the nation's electric power supply at risk due to a shortage of uranium at affordable prices provided the engineering accomplishments in key facilities and technological capability in advanced reactor systems developed over the past several decades are preserved as a point of departure for future demonstration and commercial deployment of the systems on which there is a consensus to proceed. Because of the long lead times required to develop and deploy a new large scale energy conversion system, the updated assessment should be targeted toward reaching a new national consensus by about 1990.

Meanwhile, a mission-oriented R&D program, encompassing the LMFBR and building on past accomplishments, should be vigorously pursued. The near term objective of this program should be to provide the most meaningful basis possible for identifying the readiness for demonstration of those innovative features which show the greatest promise for substantially increasing the potential economics, environmental compatibility and operating performance. A number of technological innovations, engineeering improvements and advanced design and manufacturing methodologies have already been identified and work on some of them is included in the Department of Energy (DOE) Program. Future basic program R&D should include specific evaluations, proof-of-principle and feature tests in order to provide the strongest possible basis for selection. Any such effort should also include consultation with the Nuclear Regulatory Commission to assess the licensability of the various concepts under investigation.

We note that DOE's base program now includes work on a liquid metal reactor (LMR) which utilizes many high performing features of the LMFBR and could be deployed as a high conversion burner reactor. One variant of the LMR system now under investigation is a small, modular LMR. Argonne National Laboratory is investigating an innovative LMFBR concept which uses metal fuels and pyrometallurgical reprocessing instead of the

present reference oxide fuel and aqueous reprocessing. An alternative advanced reactor candidate is the high temperature gas-cooled system.

Work is also underway here and overseas by both industry and government on improved designs for LWR systems which appear to offer high promise for the near term.

International Collaboration

To date, worldwide investment in liquid metal cooled reactors is well in excess of $10 billion. There are eight nations with LMBR programs, counting amongst them 32 liquid metal reactors. Of these, fifteen have been built in the U.S. Two proved successful for Naval applications and one of them was deployed successfully on the operating submarine, Sea Wolf. Another was an entirely utility-financed project, Fermi I, built and operated in the early 1960s by Detroit Edison Company. Argonne National Laboratory's Experimental Breeder Reactor I built in the early 1950's was the first reactor in the world to generate useful electricity by nuclear power. Argonne's Experimental Breeder Reactor II (EBRII) was the first pool-type sodium-cooled reactor in the world and has already recorded an uprecedented 20-year operating record. In the late 1960's, the joint U.S.-F.R.G. breeder test reactor SEFOR confirmed the inherent safety characteristics of oxide fuel in breeders. The 400 MWt liquid metal breeder test reactor (FFTF) has had a highly successful operating record since its completion in 1980.

Although the original development of liquid metal cooled systems took place in the United States, several other nations, particularly the Soviet Union and France, have emerged as leaders in the construction of large breeder reactor plants. The Soviet Union has a number of commercially operating liquid metal reactors, including a 350 MWe cogenerating plant (producing electricity and desalinated water) and a 600 MWe power station. France has operated a 250 MWe plant (Phenix) with high reliability for over ten years, and SuperPhenix, a 1250 MWe power station, is

expected to be connected to the French electric power grid next year. The United Kingdom is currently operating a 250 MWe prototype fast reactor, while Japan recently completed a small test reactor (JOYO) and plans to start construction of a 250 MWe demonstration plant (MONJU) this year.

Since it would be unrealistic to plan on construction and operation of another U.S. demonstration plant in the forseeable future, we will have to rely on the overseas LMFBR demonstration and prototype commercial plants for the operating experience needed to help provide focus to the U.S. base R&D program. Both DOE and industry should be encouraged to continue with their initiatives to expand their overseas technical exchange agreements to provide that we will receive design, construction, and operating data from foreign breeder plant programs in exchange for U.S. technology in the areas where we are especially strong. Negotiating acceptable LMFBR foreign exchange agreements that provide mutual benefits to participating nations will be a difficult task and will require that a part of the U.S. program be structured so as to accomondate a broader exchange. Expanded overseas collaboration will support the U.S. commitment to the Seven Nation Economic Council and demonstrate U.S. commitment to the Nuclear Non-Proliferation Treaty.

Greater overseas collaboration will also require continuation of a strong mission-oriented base LMFBR technology program, which builds on our current vast base of oxide fuel development and engineering experience, and makes the fullest use of our unique test facilities including the FFTF, EBR-II, and the non-nuclear liquid metal test facility (ETEC). The U.S. contributions to the overseas programs should be in the form of technical information, engineering and materials expertise, safety analysis capability, manufacturing capability, and use of the unique array of U.S. test facilities and related programs at its national laboratories and related contractor facilities.

U.S. Government-Industry Cooperation

We recognize the cost of the DOE's base R&D program must be balanced against the need to shrink the Federal deficit. It would seem, however, that funding for the breeder has already been cut to the bone. We are concerned that the billions of dollars and decades of effort already invested in breeder technology, the talented professionals, industrial infrastructure and unique test facilities that have contributed to the outstanding achievements of the LMFBR program are in jeopardy as the result of these cut-backs. In fiscal year 1981, DOE spent $570 million on LMFBR development (which included $172 million for CRBR); the proposed fiscal year 1986 DOE budget for LMFBR development is $212.5 million. This is more than a 50% cut in the R&D program effort. Congress should not overlook the difficulties of maintaining the viability of this long range, high priority R&D program with its repeated record of technical success in the absence of consistent funding and focus.

The nuclear industry recognizes that it too must continue its strong commitment to nuclear R&D in order to protect and enhance the investments it has already made in civilian nuclear power. The U.S. utilities have a long commitment to nuclear technology which began with the joint government/utility demonstration project, Shippingport, in the mid-1950s and has continued to this day. Currently 86 large nuclear power plants are operating and represent a combined total generating capacity of over 70,000 MWe, and an investment of approximately $300 billion in current dollars. Last year, these plants generated approximately 13 percent of the total U.S. electric energy production. Currently, U.S. utilities have at least 38 additional units scheduled to come on line before 1990.

The nuclear industry is currently spending over $200 million annually on development work to improve light water reactor technology. The utilities are funding LMFBR R&D through the Electric Power Research Institute's Consolidated Management Office. This office will continue to provide technical input from the utilities and their industrial suppliers to the U.S. advanced reactor plant design effort as provided for in an agreement for cooperation between DOE and EPRI.

A recent development is the formation of Advanced Reactor Corporation (ARC) to replace Breeder Reactor Corporation (BRC) as the senior representative of the electric utility industry's continuing interest in development of advanced nuclear reactor systems. As you may recall, BRC was established in 1972 to assemble the electric utility industry's contribution to the Clinch River Project, provide top management advice and counsel for the government, and keep the industry informed of project related developments. ARC has entered into an agreement with DOE under which representatives of the utility industry will continue to provide senior management advice and counsel to the government on advanced reactor systems R&D.

Conclusion

In summary, we believe that the U.S. should continue to maintain a strong, mission-oriented national advanced reactor program and related fuel cycle development activities in order to assure the availability of reliable and cost-effective supplies of electricity from domestic energy resources in the next century and beyond.

This calls for a base LMFBR R&D program which reflects the current realities and builds on our vast experience and investment to date in the uranium-plutonium fuel cycle, utilizes our unique test facilities now in place and expands the collaboration with overseas demonstration plant programs. For the near term, the program should be directed toward

assessing the readiness for demonstration of those innovations, which show the greatest promise. The objective should be to provide the strongest possible basis for the scientific and technical communities along with those responsible for the nation's electric power supply, to select the advanced reactor systems on which joint government industry resources should be concentrated beginning in the 1990's.

The program should have as its technical goals:

- o An updated review of those in-depth assessments that lead to selection of the LMFBR, taking in account the technological advancements of the past decade and the readiness for demonstration and

ultimate deployment of other advanced reactor systems with the objective of providing the basis on a new national consensus about 1990.

- o Maintaining an initiative on advanced plant designs along with expanded collaboration with the overseas demonstration programs so as to help identify the most significant base program needs to support further development of economically competitive electric generating plant concepts.
- o Providing for ongoing consultation with all sectors of the electric utility industry as the ultimate potential users of this technology.

Pursuit of the above policy goals should be programmed on such a basis as to encourage the maximum participation of the private sector and to allow undertaking of a new U.S. demonstration breeder reactor plant whenever a national consensus emerges on the need for such a project and funding becomes available.

STATEMENT OF MIKE MCCORMACK, WASHINGTON, DC.

Mike McCormack served in the House of Representatives from 1971 through 1980. He was Chairman of the Subcommittee on Energy Research and Production of the House Committee on Science and Technology. McCormack was the author and prime sponsor of Public Law 96-386 -- the Magnetic Fusion Energy Engineering Act of 1980.

McCormack is an independent consultant in Washington, D.C. He is not retained by anyone to submit this testimony -- or in any activity related to it. In this testimony, McCormack is expressing his own thoughts, and speaking for himself alone.

Thank you, Mr. Chairman. I'm pleased to have this opportunity to submit testimony to the Senate Appropriations Committee.

Mr. Chairman, I respectfully suggest that the DOE be requested to conduct a study of the nature, approximate cost, feasibility, and other primary characteristics of a Fusion Research Center, to be located at a DOE site with the following features: remoteness, security, NRC and DOE supervision, tritium handling, available hot labs, radiation monitoring and control, waste disposal, adequate (low cost) electric power, and on-site scientific and engineering support.

I base this recommendation on several assumptions which I believe to be realistic, even though they may be only reluctantly accepted by some. They are:

1) There is little likelihood of federal funding -- and certainly less of private funding -- for a new large "next-step" magnetic fusion experiment within the foreseeable future in the U.S. Such a large "next step" machine, as envisioned in recent consideration of a TFCX, would be a tokamak somewhat larger than the TFTR and capable of limited deuterium-tritium burns. Estimates of the costs of such a machine vary from $1-1/2 to $2 billion, but as far as I know, this does not include any serious consideration of -- or provision for -- realistic remotization of the facility, or the handling of the many pieces

of equipment that would become radioactive from exposure to neutrons. (Such provisions would probably double the cost of the machine.) Thus, such a machine may not be considered as a realistic prospect for the foreseeable future in this country.

2) The likelihood of meaningful international cooperation to construct such a machine is, I believe, quite low. I do not argue that it should not be pursued, but I suggest that such a path will be fraught with endless difficulty, frustration and delay. I do not consider it realistic for the United States to place its dependence for the future of fusion research and development on international cooperative funding.

3) It is highly unlikely that a large machine would be a realistic step toward practical commercial application. Today we are witnessing a strong tide of opinion favoring smaller fission machines. Utility executives tell me that they would be even more reluctant to invest very large sums of money in large fusion machines than they are today in large fission plants.

4) From all this, I conclude -- as I think many other thoughtful observers have concluded -- that the U.S. should not continue large machine programs beyond the scheduled operation of the TFTR. Yet we have a mission -- and we must contrive to accomplish it: to provide the research and development that will lead to early commercialization of fusion power. If we are to reach this goal, it now appears that we must do it through the development of small machines. It is now obvious that small fusion machines will be much less expensive per KWH than large ones. Perhaps they can be made inexpensive enough -- and practical enough -- to be attractive for commercial use.

5) A great deal more is understood now about plasmas in small machines than was assumed likely even two or three years ago. Accordingly, there is today a significant new body of opinion within the plasma physics community that small machines could be made to work, even though they may differ radically

in design from each other and from large machines, and may put higher demands on materials.

Many of the apparent obstacles to success with small machines of several years ago have been substantially overcome, and from my private conversations with some of the leading plasma physicists in the country, it is my conclusion that small machines can be built that have a reasonable chance of producing plasma conditions required for sustaining an actual fusion reaction.

Not only would such small machines have the advantage of being much less expensive, but it is also probable that they can be simply replaced when, through operation, they become unusable. It is quite conceivable that such machines can simply be removed from an operating cell, stored in a shielded cell and allowed to cool for several years -- and a new machine installed. These might be "zero-maintenance" machines, used -- quite like light-bulbs -- until they are worn out, and then replaced. The estimates of the cost of such machines vary from $5-10 million each, a tiny fraction of the more complicated big machine. Small machine designs include very small tokamaks (such as the Riggatron), the OTHE of GA Technologies, and additional reverse field pinch or field reverse configuration machines, spheromaks, and certainly others.

6) There is considerable interest in designing such machines within private industry. Mr. John Landis, Executive Vice President of Stone & Webster Engineering recently commented on this interest -- and a greatly increased industrial involvement -- in remarks delivered at the annual meeting of the Fusion Power Associates in La Jolla on February 1, 1985. Mr. Landis suggested a vigorous initiative to involve private industry in magnetic fusion research and development, and suggested that the DOE make all relevant information on fusion research available -- without cost to industry. He believes that this will lead to industrial involvement and the creative innovation that industrial competition always brings.

I applaud Mr. Landis' suggestion, but one major obstacle stands in the way of industrial participation. That is the realization that even if a small machine developed by private industry is able to achieve Lawson criteria, the next step would require a research site that could handle a fusion burn.

Such a site would not be on a college campus or in a conventional industrial laboratory. It would, of necessity, be located at a DOE facility with all of the pre-existing facilities that major DOE facilities provide: remoteness, security, NRC and DOE supervision, tritium handling, available hot labs for examination, radiation monitoring and control, waste disposal, adequate (low-cost) electric power, and scientific and engineering support from experienced on-site contractors.

Accordingly, Mr. Chairman, I respectfully suggest that the DOE be requested to conduct a study of the nature, approximate cost, feasibility, and other primary characteristics of a Fusion Research Center, to be located at a DOE site with the facilities I have mentioned. I should observe that Inesco projected that such a site, with two test bays, hot storage facilities, remote handling equipment, a very large motor generator, electric conversion systems and electronic controls, tritium handling facilities, and the most modern diagnostic systems could be built for $150 to $200 million within less than five years. Included in the Inesco projection was the cost of building and testing five small machines. I provide this data only to suggest a "ballpark" estimate of the cost of a Fusion Research Center, and to put it into context with the total funding available from magnetic fusion research. If one assumes an average funding level of $300 million a year for the next five years, one would conclude that if the basic assumptions I make have even a modest degree of validity; then the cost of a Fusion Research Center such as I suggest does not appear to be unreasonable.

A Fusion Research Center would be available to any governmental agency, such as the Department of Energy or Department of Defense, to test small machines without cost, and should be available to private industry to test machines, retaining proprietary information, for only the added cost involved.

Machines developed jointly by the DOD or DOE with private industry could also be tested. This is similar to the policy developed by the NASA for the use of its wind tunnels by public or private agencies. I see no legal or legislative obstacle to such an arrangement for a Fusion Research Center. It is, in fact, consistent with Administration philosophy of encouraging private industry to develop promising energy technologies; and it is consistent with the existing DOE philosophy of encouraging private contractors to use non-defense DOE facilities for research.

Mr. Chairman, this testimony may lack some of the sophistication or detail that would be expected if it were submitted as the product of some large, funded study. I trust that you will accept it as a simple attempt to make a constructive -- and I hope helpful -- suggestion, without attempting to go into great detail concerning it.

I hope that the Committee will request that the DOE conduct a study as I have suggested.

STATEMENT OF COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION

Summary of Request Proposed To This Committee

1. Support the Bureau of Reclamation's request for FY 1986 New Budget Authority of $820,877,000 and more where appropriate.

2. Support the Western Area Power Administration for FY 1986 New Budget Authority Budget Request of $207,500,000.

3. Oppose the special tax on Federal Power requested by the Office of Management and Budget in the President's Budget as Section 308 of the appropriations language.

* * *

I am Stanley K. Bazant, President of the Colorado River Energy Distributors Association ("CREDA"). I am also Executive Vice President and General Manager of Plains Electric Generation and Transmission Cooperative, Inc. My business address is 2401 Aztec Road, N.E., Albuquerque, New Mexico 87107 (telephone: 505/884-1881).

On behalf of CREDA, I wish to thank the Chairman and members of this Subcommittee for the opportunity to appear before you on the subject of the Administration's FY 1986 Budget. My testimony will be directed at requests for appropriations for the Bureau of Reclamation and the Western Area Power Administration.

CREDA is a non-profit Colorado membership corporation comprised of twenty (20) publicly-owned electric utility systems, organizations of publicly-owned electric utility systems and state agencies located in the Colorado River Basin States of Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming. A complete list of CREDA's members is attached for your reference.

CREDA represents statutory preference customers which purchase over 65 percent of the electric power and energy produced by the Colorado River Storage Project plus significant portions of the Boulder Canyon and Parker-Davis Projects and 100 percent of the Rio Grande Project. These purchases are from the Western Area Power Administration. CREDA's members render electric service to hundreds of thousands of rural, residential, commercial and industrial users.

A. Department of the Interior,
Bureau of Reclamation

CREDA supports the Bureau of Reclamation's overall request for FY 1986 New Budget Authority of $820,877,000, although we are troubled by the serious drop in this request when compared with previous budget requests. While we understand that the drop is largely due to the availability of unexpended prior year appropriations, we further understand that these unexpended funds have resulted from freezes on current Bureau construction programs. When coupled with the continuation of the President's no "new starts" policy, the President's Budget for FY 1986 represents a continued restriction on the development of the Nation's water and power resources.

CREDA acknowledges that the Nation faces an extreme Budget crisis; however, CREDA must urge this Subcommittee not to lose sight of the fact that the Nation also faces a crisis of another nature. Every year that needed water projects are deferred means another year of lost water development benefits. Rather than being stored and applied to the land, water is allowed to run to the sea. Farms are not irrigated, crops are not developed and, ultimately, the Nation's gross national product does not keep pace with the needs of the Nation's citizens.

CREDA urges this Subcommittee to carefully weigh the Nation's fiscal and water development and insure that at least the amounts requested in the President's Budget for the Bureau of Reclamation are approved. The

Subcommittee should also consider augmenting the President's request where appropriate. Continuation of the present no "new starts" policy for water projects is essentially continuation of a no growth policy for rural America -- a policy which this country cannot afford to perpetuate much longer.

B. Western Area Power Administration

The Western Area Power Administration plays an important role in the delivery of electric power from federal water projects. Western is a vital link in making power resources available to the Nation, as well as helping generate the revenues required to pay back the cost of federal power and irrigation projects. CREDA supports the full request of Western for FY 1986 New Budget Authority Budget of $207,500,000.

Western's Colorado River Storage Power System and Parker-Davis System are particularly important to CREDA members. CREDA specifically supports activities scheduled to commence or continue during FY 1986 for these systems.

C. OMB "Tax" On Federal Power

I would like to close my remarks today by addressing a very troublesome proposal which has recently been advanced by the President's Office of Management and Budget. It is one which would create a special "tax" on federally-generated power. The proposal is contained in the President's Budget as Section 308 of the appropriations language. Under this provision, Western's power rates would literally skyrocket. In CREDA's area rates for CRSP power would more than double in a single year.

First, it is important to understand that the Administration has drastically understated the impact of its price hike. For example, in prepared material it claims that the rate increase for CRSP power would be some 54%. This figure is just plain wrong. The Administration developed a base case for measurement purposes which included an assumption that rates for power are presently set on the basis of current interest rates and are much higher than they actually are now. This could not be true without Congressional approval because under existing law CRSP interest rates are established when features of the CRSP project are actually constructed.

Once errors in the Administration's analysis are corrected, the true rate increase Section 308 would cause for CRSP is approximately 133% for 1986. This increase would cost CRSP ratepayers in the following states the following amounts:

Wyoming	$ 8.0 million
Utah	20.2 million
Colorado	21.1 million
Nevada	2.8 million
New Mexico	9.7 million
Arizona	11.9 million
	$73.7 million

As we all know, CRSP customers live primarily in small towns and rural areas. Thus, this $73.7 million impact will again fall on the shoulders of the very people who can least afford it, rural America. Small town and rural America is already under attack by the Reagan Administration. It simply cannot stand one more onslaught in the form of 133% increases in electricity, particularly when, as we will demonstrate, those increases are anything but cost-based!

Second, let us be clear that this Reagan Administration proposal is a tax -- nothing more and nothing less. As you all know, CRSP power rates are currently set to return to the government its full power investment plus interest. In addition, power users contribute huge sums to assist in repayment of irrigation features of projects. The cost of power facilities are being paid off in the CRSP and Rio Grande Projects. There is no question in these projects about whether ratepayers will or will not return the full cost of the projects to the government and then some. Indeed, the only controversy in CRSP

is whether power rates are too high at the present time because they include the costs of construction of future projects which have not yet commenced. Since our rates are at least adequate at the present time, any increase in those rates through Budget gimmickry amounts to, by definition, a tax. It is a tax because it is an amount payable on top of the cost of the product.

I wish the danger of Section 308 ended there but it does not. This special tax proposed by the Reagan Administration represents an ominous step in utility ratemaking -- one which none of us here today would ever condone if private power company rates were at stake. What is being proposed by the President is a departure from cost-based ratemaking. If adopted, it would move the federal government toward market-based pricing of electricity -- a concept which has never been accepted in utility ratemaking in this country, irrespective of who the utility is.

This would be an ominous step because it can be argued that the price of certain utility services is almost limitless. In other words, electric, water, sewer and gas services are so vital to our society that people will pay almost anything to have access to them. Another way of saying this is that the market will bear a very, very high price for essential utility services before it decides to do without those services. As a result, our country has always decided that utility services should be regulated and priced upon a "cost of service" basis. For the government, this has always meant a return to the government of its allocable investment with interest plus O&M -- no less and no more.

The Reagan Administration's special tax on federal power would depart from cost-based ratemaking in two ways. It would jump interest rates on federal investment to the highest rate currently payable by the government. This is akin to telling a homeowner that the cost of the money he borrowed to build his house 20 years ago will all of a sudden be doubled because if that money were to be borrowed today (which it wasn't), the interest rate would be twice as high.

The Reagan Administration would also quicken the pace of amortization of existing projects. In some cases, this change in policy will raise rates. In CRSP, however, faster amortization of existing projects will, in fact, lower rates because it will exclude the effect of including in rates certain projects not yet commenced. Thus, I am sure it will not surprise you to learn that the Administration does not suggest quick amortization and lower rates for CRSP. Rather, its proposal, contained in Section 308 of the Budget language, provides for charging the highest rate possible, either under faster amortization techniques or under present repayment techniques, whichever yields the highest rates. This lays bare the Administration's true intent -- raise rates as high as possible no matter what. The Reagan Administration's is higher rates - not, equitable, fair or even consistent rates.

In closing, may I say on behalf of CREDA that it is a pleasure to appear before you today. CREDA supports the President's FY 1986 Budget Requests for the Western Area Power Administration and the Bureau of Reclamation (although, in the case of the Bureau, we would urge the Subcommittee to consider an even more aggressive funding program). CREDA would also warn the Subcommittee that the President's Budget contains language which would impose a special tax on federal power, raising the price of that power far beyond cost and moving its price towards market value -- a departure from long-standing federal water power policy as well as this country's ratemaking principles for pricing utility services, whether publicly or privately owned. CREDA urges the Subcommittee to reject this special tax on federal power.

I. CREDA Members

Organization or Wholesale Utility: Retail Utility	Residential Customers (000)	Residential Sales (000 MWh)	Total Retail Sales (000 MWh)	Source(s)
Wyoming Muny Power Authority:				
Cody Muni Light	5,594	13,080	19,164	(1),(2)
Guernsey Electric	591	3,688	5,014	(1),(6)
Lusk L & P	721	6,129	10,596	(1),(2)
Pines Bluff L, W & P	405	3,440	5,631	(1)
Wheatland Muni	1,780	14,960	25,917	(1)
Lingle	N.A.	N.A.	2,277	(5),(6)
Ft. Laramie	N.A.	N.A.	1,082	(5),(6)
Total	5,594	41,297	69,681	
Strawberry Water Users - Utah:				
Payson City	2,542	10,168	27,658	(1),(2)
Salem City	592	4,698	5,102	(1)
Spanish Fork City	3,475	27,105	29,705	(1),(2)
Springville Muni	4,200	25,200	29,699	(1),(2)
Total	10,809	67,171	92,164	
Intermountain Consumer Power Association - Wyoming:				
Bridger Valley Elect	3,566	26,852	45,304	(4)
Total	3,566	26,852	45,304	
Intermountain Consumer Power Association - Utah:				
Beaver City Muni	560	6,160	15,988	(1),(2)
Ephraim L & P	600	6,600	11,420	(1),(2)
Fairview Muni	480	3,456	5,718	(1),(6)
Fillmore City	697	7,667	21,780	(1),(6)
Heber L & P	2,900	20,300	39,140	(1),(2)
Holden Electric	125	1,200	1,631	(1),(2)
Hyrum City	1,188	13,068	24,720	(1),(2)
Kanosh Electric	130	1,300	1,400	(1)
Kaysville City	2,686	24,174	27,455	(1)
Lehi City	2,100	5,040	17,100	(1),(6)
Logan City Muni	10,950	52,560	131,215	(1),(6)
Monroe City	306	3,060	7,746	(1),(2)
Morgan City	612	3,394	7,673	(1)
Mt. Pleasant Muni	960	11,520	12,889	(1),(2)
Murray City	11,082	79,790	189,183	(1)
Parowan City	700	9,743	12,604	(1),(2)
Spring City L & P	152	1,520	2,781	(1),(2)
Meadow	N.A.	N.A.	1,487	(6)
Oak City	N.A.	N.A.	1,393	(6)
Dixie-Escalante	1,660	25,394	83,168	(4)
Flowell Electric	189	2,271	20,566	(4)
Garkane Power	3,760	32,829	97,294	(4)
Moon Lake Electric	8,242	74,285	768,148	(4)
Total	50,079	385,331	1,302,499	
Intermountain Consumer Power Association - Nevada:				
Mt. Wheeler	4,029	33,778	145,285	(4)
Total	4,029	33,778	145,285	
Intermountain Consumer Power Association - Arizona:				
Page	1,864	N.A.	32,285	(3),(6)
Total	1,864	N.A.	32,285	
Platte River Power Authority:				
Estes Park	4,807	38,956	53,220	(1)
Ft. Collins L & P	23,755	155,239	458,283	(1)
Longmont	16,466	117,238	236,839	(1)
Loveland Electric	12,306	75,067	195,042	(1)
Total	57,334	386,500	943,384	
Colorado River Commission:				
Boulder City	4,000	60,300	85,275	(1)
Valley Electric	3,053	32,545	103,796	(4)
Overton #5	1,595	28,365	55,746	(4)
Lincoln City #1	17	620	49,964	(4)
Pacific Engineering	0	0	62,390	(5)
Total	8,665	121,830	357,171	
Arizona Power Pooling Association:				
Mesa City	8,737	82,171	198,871	(1)
Duncan Valley	1,435	9,016	466,889	(4)
Graham County	4,055	23,692	56,770	(4)
Mohave Electric	10,794	84,519	168,935	(4)
Sulphur Springs	17,800	123,021	304,475	(4)
Trico Electric	7,106	49,799	694,317	(4)
Pinal County #2	1,625	24,733	230,507	(1)
Total	51,552	396,951	2,120,764	
Arizona Power Authority:				
Queen Creek	0	0	5,100	
San Tan Irrigation	0	0	2,423	
Chandler Heights	0	0	1,657	
Total	0	0	9,180	

I. CREDA Members (continued)

Organization or Wholesale Utility: Retail Utility	Residential Customers (000)	Residential Sales (000 MWh)	Total Retail Sales (000 MWh)	Source(s)
Irrigation and Electrical District Association:				
Wellton-Mohawk	1,741	19,468	45,620	(5),(6)
Pinal County #3	0	0	327,059	(1),(6)
Pinal County #4	149	1,192	137,596	(5),(6)
Pinal County #5	158	1,696	102,493	(5),(6)
Maricopa Cnty #5	N.A.	N.A.	8,757	(6)
Pinal County #6	98	787	108,421	(5),(6)
Maricopa County Water District	N.A.	N.A.	75,837	(5),(6)
Ocotillo Water	N.A.	N.A.	13,132	(5),(6)
Electric Dis #7	N.A.	N.A.	67,782	(5),(6)
Roosevelt Irrigation	N.A.	N.A.	81,039	(5),(6)
Roosevelt Water	N.A.	N.A.	100,489	(5),(6)
Total	2,146	23,143	1,066,225	
Plains G & T - Arizona:				
Navopache Electric	16,063	87,404	172,656	(4)
Total	16,063	87,404	172,656	
Plains G & T - New Mexico:				
Central New Mexico	5,491	31,820	59,766	(4)
Columbus Electric	1,890	14,032	196,991	(4)
Continental Divide	14,180	77,110	432,404	(4)
Jemez Mountains	14,847	74,435	162,816	(4)
Kit Carson	11,649	58,985	187,746	(4)
Mora-San Miguel	5,009	16,158	23,848	(4)
Northern Rio Arriba	2,145	7,436	14,259	(4)
Otero County	7,183	33,457	64,950	(4)
Sierra Electric	1,734	7,345	16,521	(4)
Socorro Electric	5,084	28,307	83,675	(4)
Southwestern	945	5,723	12,044	(4)
Springer Electric	2,014	8,687	42,904	(4)
Total	72,171	363,495	1,297,924	
Provo	20,001	119,946	324,600	(1),(6)
Farmington Electric	19,776	115,788	345,768	(1)
Truth or Consequences	2,655	11,948	24,457	(1)
Safford Muni	2,439	16,534	36,282	(1)
Thatcher Muni	552	4,416	8,256	(1),(6)
Navajo Tribal	12,450	63,570	636,756	(1)
Salt River Project	305,870	3,765,260	8,823,000	(5)
Ak Chinook Indians	N.A.	N.A.	20,722	(5),(6)
San Carlos Project	7,645	N.A.	85,231	(5),(6)
Total	371,388	4,097,462	10,305,072	

I. CREDA Members

Organization or Wholesale Utility: Retail Utility	
City of Colorado Springs, Colorado	No Data Available
Silver State Power Association, Nevada	No Data Available
Utah Minicipal Power Association City of Manti City of Levan City of Nephi	No Data Available

Statement of Institute of Electrical and Electronics Engineers

The IEEE is the world's largest technical professional society with over 260,000 members worldwide, more than 215,000 of whom live and work in the United States. Its Energy Committee provides a forum for the development and public pronouncement of positions on energy issues of concern to the Institute. We would like to share with you our views on the Electric Energy Systems, Energy Storage, and Fusion Programs of the Department of Energy as proposed for Fiscal Year 1986. Specifically, we urge you to appropriate the full amount authorized for each of these program areas.

Electric Energy Systems and Energy Storage

The IEEE has an official Institute position paper on "The Role of Electricity in the U.S. Economy" which has emphasized the fundamental importance of energy availability to the welfare and economic health of society. This position recommends an increased role for electricity in the nation's energy economy and calls for increased support of research and development programs to improve electric power systems' efficiency and reliability, as well as to provide advanced energy conversion technologies.

The IEEE has consistently supported the Electric Energy Systems and the Energy Storage Program in testimony before Congressional Committees having oversight over their budgets. We strongly support continuation of these programs. A lasting commitment to research in such a complex and critical area is essential. Continuity of research is espoused by the majority but keeping both government and industry involved in a consistent way is not simple. We do not live in a time of instantaneous inventions and instantaneous rewards. Advancing technology requires hard, patient and deliberate efforts for an extended period. Further, to advance technology in this modern world requires significant investment in people and capital resources. It cannot be attacked with vigor in one year or one administration and abandoned totally in the following. Because of the importance of safety and reliability in electricity supply, many technologies must be demonstrated at or near commercial scale in order to be acceptable to the electric industry. Sharing the risk on these projects and providing funds for construction of such facilities is a particularly difficult problem when budgets change dramatically from year to year.

We have reviewed the current program plan and are concerned that the lack of proposed funding may severely curtail ongoing research efforts from reaching a successful conclusion. Clearly the reduction in funding from $40.1 million to $26.1 million will have a detrimental impact on program administration, continuity and coordination.

The programs are designed with a knowledge of the energy requirements of the United States and the mandated rules of funding research given by the Department of Energy. The guidelines for what is appropriate for active government support are well articulated. The government involvement is principally focused on areas that are crucial to the economic well-being and security of the nation and which are high-risk and long-term research areas. These areas cannot or will not be attempted by non-government entities. Industry, principally through the Electric Power Research Institute (EPRI) is focused through its members to place emphasis on the solution of near-term problems. Manufacturers generally have not supported long-range high-risk research, which yields no immediate payback or profit. Most require a return on their research investments within five years or less. Tax structures, foreign government-supported competition, and the growing cost-price squeeze all tend to limit manufacturer research support. Any such research that does exist is directed toward improvement of existing lines of equipment in which they have a heavy investment. Internally supported research on new technologies, or on systems-related problems, is virtually nonexistent. Utilities' support of research is limited not only by their current financial strait, which is increasingly severe in some regions of the country, but also by regulation and local rate based pressures, and is generally limited to solution of their own immediate problems and the support of EPRI.

The idea of an appropriate government support of long-term, high-risk research is severely compromised by extreme shifts in funding levels. However, the current DOE administrators seem to have a sound understanding of the needs and of the funding required to meet the needs. We applaud this. We urge that this commitment to research in the electrical energy area be consistently followed in the future.

Studies in electric field effects for which the Congress provided increased funding in last year's budget, are facing reductions in FY 86. This is most unfortunate because public concern is ever growing over the health related effects of electric fields and a reduction in funding will certainly not permit any new research; it will result in the slowing down of current activity. This will come at a time when many state legislatures are considering some form of future standards "limiting" electric field effects on humans. Such standards conceived without adequate research and technical foundation, which the current DOE program is seeking to establish, would be most detrimental to the public benefit and business economy. Furthermore, the new work recently begun in magnetic fields and DC ion propagation would have to be substantially de-emphasized. It is the responsibility of the federal government to provide sufficient and unbiased information on the biological effects of electric fields.

Similarly the proposed FY 86 budget would severely reduce the investigation into the performance of power systems and equipment under the effect of electromagnetic pulses. These pulses could be generated by nuclear blasts at high altitudes in which no physical ground damage may be visible, but could produce not only a wide disruption of electric system continuity with resultant economic and public chaos but also a serious threat to national security. There is insufficient knowledge on these wave forms and their behavior on systems and equipment. Insufficient funding is being provided to carry on any new effort and precludes any testing from being made of equipment under these very adverse transient conditions. The testing process is obviously a very necessary part of the research, but it is a costly thing to do.

Another example of losing the use of an expensive research tool is the Battery Energy Storage Test (BEST) facility. This facility enables the testing of new advanced battery types under realistic conditions. The BEST project has not been budgeted for any operating funds in FY 86 and yet the need for developing and testing new advanced battery types has not diminished. New battery types which are more efficient and cheaper are needed for electric utility load leveling and for electric vehicles of the future. Zinc-chloride batteries have just gone through extensive testing procedures, and the even more promising sodium-sulphur battery has been scheduled to be tested. Currently the private sector is supplying 60% of these operating funds and it is rather unlikely the private sector can assume a greater share of the operations without curtailing other necessary research activities.

Systems engineering R&D is needed to provide options for the future electrical network which will improve regional energy exchange and enhance essential service continuity during regional and national emergencies. The systems technology area is hardest hit in the proposed FY 86 budget. This program includes high voltage DC research, new materials for use in power systems (from 20 years or more into the future) of magnetic, dielectric, or semi-conductor nature. Power semi-conductor technology is being surrendered to foreign competitors, and there is a real need to make a serious effort to regain U.S. technological leadership in this field. DOE had planned to initiate a multi-year program to help in regaining this lead, however, inadequate FY 86 funding will cause the efforts to be aborted.

In summary, one must not lose sight of the hard facts of research: from the inception of the research program to commercial viability, a project may take 10-15 years to complete. We must be working today for systems to be available for commercial use in the next decade. The Electric Energy Systems and the Energy Storage Programs are both concerned with crucial developments. It will require adequate lead times and continuity of funding through the whole R&D cycle to achieve their goals. Research activities that can provide benefits to public health, national security, and the economic viability of our electric utility manufacturing industry are deserving of serious considerations of additional funding in FY 86.

Fusion

We continue to believe that fusion possesses the highest potential of all presently known energy sources. We have chosen to address a few major issues which we believe require serious Congressional attention.

The issues are the need for an ignition/burning core experiment, and the declining role of fusion under the Reagan Administration.

1. The need for an Ignition and Burning Core Experiment

   The IEEE United States Activities Board, in its most recent position paper on Fusion Power dated November 29, 1984, "recommends that the Department of Energy immediately embark upon the design and construction of the next major evolutionary step in the fusion program, generally referenced to as the 'Burning Plasma Experiment'." Let me elaborate on the reason for this position. The fusion program requires one final piece of critical scientific information before it can, with some certainty, develop a practical power producing fusion reactor: the operational characteristics of an ignited and burning plasma core. The present Department of Energy funding levels for fusion preclude the possibility of obtaining this data for the next 10 to 20 years.

   If the program is not allowed to move forward with a certain minimum momentum, then one of the consequences is a gradual but noticeable reduction in trained personnel. When major facilities are not aggressively operated (e.g. TFTR) or constructed (MFTF-B), then people in the program become frustrated with the best people attracted away from fusion. (We are seeing this happen now.) When the best people leave and the operating time of an experiment is reduced, there is less scientific progress. When the Congress and OMB see less progress, then more-often-than-not the result is reduced program funding. This puts the program into an unwise, ever-declining funding spiral. The IEEE Energy Committee believes that if the program is to maintain any semblance of initiative, it must be allowed to move forward to construct facilities for studying an ignited and burning plasma.

   Our position on this is thus very much at odds with the Department of Energy's present Magnetic Fusion Program Plan which does not envision a line item for an ignition experiment until 1990 at the earliest. The country will have spent $1.6 billion in additional fusion support before the Department even plans to ask for this experiment. We consider this plan unacceptably long.

2. Why has fusion received reduced funding compared to other major scientific programs within the Administration?

   Let us make the case with statistics. Within the Department of Energy's Office of Energy Research (OER), in which the fusion program resides, fusion funding requests, of all the OER programs, have not faired well. Through the present fiscal year (1985), High Energy Physics increased by nearly 50% from $364.5 million in 1982 to $545.6 million in 1985. Nuclear Physics increased by 37% over the same period and Basic Energy Sciences increased from $241 million to $422.6 million or over 75%. In the 1982 to 1985 period, fusion experienced a 7% growth in terms of requested funding. However, due to a $46 million reduction in the 1985 Appropriations Bill, fusion has experienced a 3% overall decrease in funding, the only OER program to have less dollars in 1985 than in 1982.

It appears that 1986 will see the budgets for most non-military programs cut, and it appears that fusion will not be an exception (The $390 million FY'86 requests imply a net program reduction of over 14% since 1982.) See Table 1.

TABLE 1.

BUDGET HISTORY OF SELECTED SCIENCE PROGRAMS

FISCAL YEAR	(MILLIONS OF DOLLARS) HIGH ENERGY PHYSICS	NUCLEAR PHYSICS	BASIC ENERGY SCIENCES	FUSION
FY 82	364.5	133.9	241.2	451.2
FY 83	431.0	137.0	282.4	461.3
FY 84	472.9	163.2	335.6	468.4
FY 85 (est.)	545.6	182.9	422.6	437.0
FY 86 (proposed)	510.1	172.9	406.8	390.0
% change FY'85 to FY'86	-7%	-5%	-4%	-11%

Independent of the magnitude of the fusion budget, one must still try to understand the logic behind the present funding for fusion. To get a handle on this problem, let me review the objectives of the fusion program.

The fusion program has the well-recognized long-term goal of providing the world with essentially limitless energy from sources (deuterium extracted from water) which enjoy no geographic or political boundaries.

The specific objectives and benefits of fusion research depend on the timeframe in question. In the medium-term, fusion reactor technology development and demonstration will stimulate the country's innovative engineering, materials development, and industrial project management capabilities. If properly administered, this phase will provide the country with many important spin-offs, and begin to repay the taxpayers for their patience and investment. Thus, it would appear that fusion is not only a strong and worthwhile scientific endeavor, but it also has a clearly visible and practical end goal.

If the Administration, with the approval of Congress, wishes to fund "good-science-for-the-sake-of-good-science," then fusion, being one of those good sciences, should receive its fair share of support.

If, on the other hand, it makes good sense to give increased importance to those areas of good science which also have visible practical end uses, then again fusion also deserves increased funding. In either case it is clear that fusion has been overlooked. We would ask Congress to reverse this trend.

This completes our formal statement, and we would be pleased to answer any questions you might have.

Statement of Public Service Co. of Colorado

Mr. Chairman and Members of the Subcommittee, my name is Richard F. Walker, and I am President of Public Service Company of Colorado and Chairman of Gas-Cooled Reactor Associates (GCRA) which is a utility/user organization that supports the development of the High Temperature Gas-Cooled Reactor (HTGR). We appreciate the opportunity to present our recommendations on the HTGR Programs at the DOE and NRC and the related budgets for FY 1986. In summary, we recommend that the DOE program should continue the current efforts on advancing the design of the side-by-side, steel vessel, modular HTGR concept. This concept has been selected within the overall Program for near-term emphasis to establish whether there is a sufficient basis for a Project commitment. The selection of this concept highlights the progress made during the past year of development and evaluation of smaller, simpler HTGRs. Because of the crucial importance associated with establishing the perceived licensing benefits of the modular HTGR, the near-term efforts should be focused on the preparation of a Preliminary Safety Information Document (PSID) which will be used as a means for NRC review and issuance of a licensability statement. The preferred strategy for deploying the modular HTGR is through a Licensing and Technology Test (LTT) Project that would be used to implement the "license by test" concept as well as to demonstrate the performance, cost and schedule features of the modular HTGR. In order to assure a focused Project development effort, an LTT Project Plan should be prepared in support of the FY 1987 budget request. The recommended budget level at DOE for FY 1986 is $38 million, including $1 million for capital equipment. For the HTGR Program at the NRC, it is recommended that the activities concentrate on the continued development of HTGR-specific licensing criteria in preparation for the assessment of the PSID. Such activities should focus on the side-by-side modular HTGR concept while maintaining a cadre of generic technical expertise on HTGRs appropriate for continued operation of the Fort St. Vrain plant. The recommended budget level at NRC for FY 1986 is $2 million. In concert with the HTGR Program activities at DOE and NRC, GCRA proposes to continue to coordinate project planning and development activities in support of the LTT Project Plan, and provide program integration support services to DOE.

The bases for utility/user interest in the HTGR are the unique characteristics that distinguish it from the current generation of nuclear power systems. The most notable of these features are the inherent safety and low environmental impact characteristics that translate to minimal reliance on engineered safety systems, substantial time (measured in hours) for operator response to postulated reactor upset conditions, added margins for plant investment protection and siting flexibility, and low radiation exposure of plant personnel. Furthermore, the HTGR is an evolutionary technology that extends beyond near-term power and cogeneration applications to advanced concepts for power generation and process heat.

From its inception in 1978, GCRA's objective has been to establish the HTGR as an attractive commercial alternative for a broad range of applications in a timely manner. The approach to achieving this objective has been to establish an initial HTGR Project after which commercial plants can be deployed. In achieving this objective, the maximum use will be made of the past 35 years of worldwide gas-cooled reactor technology, demonstration and application. In the near-term, the objective is to develop an HTGR design that is responsive to the utility/user's requirements, eases the current institutional difficulties associated with nuclear power and optimally capitalizes on the HTGR's unique characteristics.

During the past year, a comprehensive evaluation has been undertaken within the HTGR Program of various smaller, simpler HTGR design concepts. Through this effort, a consensus has been reached among the Program participants on the key elements of the HTGR Program. In particular, the preferred concept for near-term development and deployment emphasis is the steel vessel, modular design. Resources for the near-term, including the balance of 1985, should be focused on pursuing this concept to establish whether there is a sufficient basis for Project commitment. Key distinguishing features of the modular HTGR include:

1. The core size and power density are limited such that the fuel particle coatings retain the fission products to an acceptable degree under all licensing basis events, with decay heat removal being accomodated by the passive mechanisms of radiation and conduction. This feature is expected to simplify the overall concept, particularly the licensing and operations activities.

2. The nuclear steam supply system and other systems within the nuclear island are shop fabricated and assembled to nuclear standards, while the balance of plant is largely manufactured and constructed to conventional fossil plant standards. This is expected to improve the productivity and reduce the schedule and field erection costs.

3. The plant is composed of independent reactor units of approximately 250 MWt/100 MWe that can be constructed as a cluster of modules or sequentially constructed to more closely match load growth requirements and the utility's financing constraints.

The preferred strategy for deploying the modular HTGR is through a Licensing and Technology Test Project that would be used to implement the "license by test" concept as well as to demonstrate the performance, cost and schedule features of the modular HTGR. Further, international cooperation, particularly with the Federal Republic of Germany, should be expanded to the maximum degree in order to reduce the overall costs and risks to the U.S.

A major ongoing effort within GCRA has been to coordinate the private-sector efforts in support of such a Project initiative. To this end, exploratory activities are underway to establish a consolidated vendor/supplier/AE entity that can efficiently design and build the Licensing and Technology Test Project. The intent is that, upon successful completion, multiple vendor entities would be able to offer commercial modular HTGR plants. In addition, efforts within GCRA are continuing to establish the detailed utility/user requirements of such a Project, candidate sites, host or supporting utility arrangements, as well as arrangements for broad utility support for the Project.

With regard to DOE's HTGR budget for FY 1986, it is recommended that the overall Program be funded at a minimum level of $38 million for reactor and spent fuel management development, including $1 million for capital equipment. The emphasis of the DOE Program should be on advancing the design of the steel vessel, modular HTGR and the preparation of a Preliminary Safety Information Document (PSID) which will be used as a basis for NRC review and issuance of a licensability statement. In addition, a Licensing and Technology Test Project Plan should be prepared for support of the FY 1987 budget request. Government support for the proposed budget level would be invaluable in nurturing the continued development of private-sector and international support for a Project commitment plus provide strong evidence of the U.S. support for revitalizing nuclear power.

Regarding the HTGR Program at the NRC, we are pleased to note that during the past year activities have begun in earnest to establish an HTGR Licensing Plan and interactions with the Advanced Reactors Group within the NRC. The proposed approach, as documented in the Licensing Plan, is to get agreement with the NRC during 1985 on overall licensing criteria, licensing basis events, and scope of safety-related structures, systems and components which appropriately reflect the unique characteristics of the modular HTGR concept. With this as a foundation, activities in 1986 will concentrate on specific issues pertinent to how well the design and technology program satisfy the criteria base. Finally, in 1987 we are requesting that the NRC review the design and safety assessments provided in a Preliminary Safety Information Document (PSID), to be developed in 1986, and issue a licensability statement. The primary function of this licensability statement would be to determine at an early stage whether the NRC finds any feature of the design or proposed technology program to be unacceptable. The HTGR safety activities at the NRC in FY 1986 should focus on the side-by-side, modular HTGR concept while maintaining a cadre of generic technical expertise on HTGRs appropriate for the continued operation of the Fort St. Vrain (FSV) plant. We recommend that these

NRC efforts be focused specifically on the HTGR and be funded at a level of aproximately $2 million in FY 1986.

Finally, I would like to update you on the Fort St. Vrain power plant. Last year, I reported to the Subcommittee about the improving performance of the plant during 1983, but unfortunately, this trend did not continue through 1984. On January 20, 1984 the plant underwent a planned shutdown for its third refueling along with an extensive refurbishment and maintenance program that lasted until the second week in June. Shortly after the plant was restarted, a plant upset occurred which resulted in a significant ingress of water into the primary coolant system via the helium circulators' bearing seals. In the subsequent safe shutdown, it was observed that six pairs of control rods failed to drop into the reactor. While this event in itself posed no safety hazard, the subsequent investigation revealed that excess moisture in the primary helium system had caused a corrosion problem in the control rod drives. During the past months, Public Service Company of Colorado has made the appropriate improvements at the plant and is currently refurbishing the control rod drives. It is anticipated that the plant will be able to be restarted in the next few months.

In spite of such first-of-a-kind difficulties, it should be recognized that Fort St. Vrain has provided critical confirmation and demonstration of many inherent HTGR features. For example, the amount of radioactivity carried in the helium coolant has been less than two percent of the design limit, demonstrating the structural integrity of the coated fuel particles. Personnel exposure data for the U.S. indicate that Fort St. Vrain has had an average annual person-rem exposure rate per GW(e)-year approximately a hundred times lower than the rate in light water reactor plants. This low personnel exposure level is probably the lowest of any commercial nuclear plant in the world and is even more significant in view of the fact that Fort St. Vrain allows virtually unlimited access into the reactor building for all operations and maintenance personnel. As another example, temperature transients have been slow and predictable, even during periods of temporary loss of forced cooling, demonstrating the large heat capacity of the core. Operation to date has achieved 1000°F steam temperatures and a net efficiency of 38.5%--the highest of any nuclear plant in the U.S.

As part of a continuing commitment to improve the performance of Fort St. Vrain, Public Service Company of Colorado plans to spend about $16 million in 1985. Furthermore, lessons-learned are being incorporated by the Program in subsequent HTGR designs. For example, a new helium circulator design, possibly using an electric motor drive and magnetic bearings that do not require water, is being investigated for possible application in the modular HTGR and might even be able to replace the existing circulators in Fort St. Vrain. We are confident that Fort St. Vrain will become a reliable source of kilowatt-hours for our customers as well as continue to provide critical information regarding the demonstration of HTGR systems and components. My Company is proud of our role as owner/operator of Fort St. Vrain and we remain committed to the HTGR concept.

Mr. Chairman, I appreciate the opportunity to present the utility/user support and perspective on the HTGR Program to your Subcommittee. With your continued support, we will bring to fruition an HTGR Program that is responsive to utility/user needs and the nation as a whole.

STATEMENT OF NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

The Energy Committee of the National Association of State Universities and Land-Grant Colleges, while keenly aware of the need for budget restraint, we are equally aware of the fundamental importance of assuring an adequate national supply of energy at reasonable cost over the long term. Whereas federal policy and programs have aided in broadening the base of energy resources over the past decade, we must not lower our guard and commitment to assuring a stable long-term energy base for ourselves and our allies.

This long term commitment must involve the provision of an adequate pool of technical manpower to continue the R&D process and the provision of an adequate level of research funding to continue the desired technology evolution in the private sector.

Universities and colleges are the only sources of new manpower that are so necessary to the highly specialized research and development activities of private industry and government research laboratories. While state governments, private donors and the students themselves fuel the undergraduate education process, federal research funds are the dominate factor in virtually all phases of engineering and science graduate education. In fact, recent NSF data shows that the Federal portion of academic R&D expenditures has ranged between 63 and 69 percent during the 1970-1984 period.

Thus, we believe that it is imperative for the long-term health of this country's economy and stability of international affairs, that federal funding for energy research at Universities must be increased through redirection of the DOE Budget proposal.

There is abundant data to indicate the imbalance of recent funding levels. For example, the University Coal Research Program annually attracts several hundred proposals despite the fact that funds provide for only about 10% to be supported. Similar limitations exist for University researcher's seeking support in the conservation and renewable energy areas.

Although the need is much greater, the NASULGC Energy Committee recommends the following:

1. University R&D funding for conservation and renewable energy should be increased from 2% ($6.9M) to 3% ($10.0M) of the proposed university support budget.

2. University R&D funding for fossil energy should be increased from 8% ($26.2 M) to at least 10% ($35.0M) (these amounts are exclusive of former university energy centers supported by DOE).

If funding for university research is not increased in these areas the academic education and research capacity will deteriorate at an increasingly rapid rate with alarming ramifications for national energy programs and policies. The base of faculty is now in decline. They are moving on to new non-energy subjects. There is little or no incentive for graduate students to specialize in energy subjects.

More important is the potential loss of technological breakthroughs. For example, with continued research at the University of Maine a new process may soon be developed that could significantly reduce the energy requirements in the production of wood pulp in paper manufacturing. Auburn University may soon develop a two stage process for the hydrolysis of biomass which would provide much higher yields of fermentable sugars from cellulose, thus making lower cost alcohol fuels possible.

Similarly, in coal research, faculty at several universities believe they are "closing in" on breakthroughs in catalyst development for direct coal liquefaction. New developments in low temperature, low pressure coal dissolution show promise as a cost effective coal conversion process.

Again, the continued inadequate funding of university energy research puts at risk the potential benefits of these technolgical advancements.

It is reasonably clear that state and private sector investment could not support the level of research needed to achieve progress in the interest of a national, balanced, and sound energy R&D policy. The increases recommended for university R&D will provide a more balanced program without undue effects on other areas of the proposed DOE budget, and will assist in retaining the universities capacity to actively cooperate and assist in the attainment of national energy goals.

The NASULGC Energy Committee shares Secretary Herrington's strategy in applying emphasis on the most essential longer-term research and development, leaving short-term engineering development and commercial application wherever possible to the private sector. The Committee would further stress that investment in human capital is no less important to the economy than machines and industrial plants, and that the advance of energy science in its broadest sense is a significant factor in the growth and productivity of the United States.

Thank you for the opportunity to present this statement.

STATEMENT OF ASSOCIATION OF AMERICAN UNIVERSITIES

Mr. Chairman and Members of the Committee, my name is Robert M. Rosenzweig and I am President of the Association of American Universities. I submit this testimony in behalf of the membership of the Association of American Universities, the American Council on Education, and the National Association of State Universities and Land-Grant Colleges and the Council of Graduate Schools which represent virtually all of the nation's universities and colleges which carry out research supported by the Department of Energy. They also train most of the research scientists who carry on basic and applied research activities, not only at American universities but throughout American industry. As such, they make up the academic base for most of the Department of Energy's research and training programs. I would like to present to you our views with regard to the FY 1986 budget request for DOE university research and related programs by first addressing some general concerns and then discussing them in the context of the DOE budget.

GENERAL DISCUSSION

All of our national policy objectives depend heavily on graduate education, both for highly trained personnel and for advances in scientific and technical knowledge that sustain our economy and ensure our defense. It is our graduate schools that provide the continuing supply of talented individuals with the knowledge, technical skills and perception that equips them to meet the challenges of this complex and technologically sophisticated age.

We can look at our nation's modern history for evidence of this. During World War II, there was an emphasis on federal support for university programs for research and graduate training when there was a sudden dependency on university-based science and scientists. And again, in the late 1950s, after the successful launching of Sputnik, there was an increased federal interest and investment in research and advanced education as parts of a greater national effort to regain and sustain American scientific and technological superiority.

This led to a clear federal commitment to excellence in graduate education and research. This commitment manifested itself in the development of programs in the National Science Foundation and the mission agencies, including NASA and the DOD, which contributed to strengthening our research and graduate education enterprise.

Since that time, the federal government has remained the primary patron of science. However, its investment in those core programs designed to strengthen graduate education and contribute to the research and education environment in universities has diminished significantly in some important areas.

Today many of our leading graduate schools are seeing graduate enrollments tumble at the same time that undergraduate students clamor for the limited spaces available in our schools of engineering and computer science. Faculty are strained to meet the demand, and the quality of instruction is being threatened. The ranks of truly talented young faculty are thinning. Time to pursue research frequently is squeezed, and the questions researchers are able to pursue in their investigations often are limited by the obsolete instruments available to them. The capacity of faculty to compensate with ingenuity for inadequate research tools is reaching its limits. In addition to outdated equipment, many laboratory facilities that house that equipment are themselves obsolete; they require modernization if they are to serve through the decade as effective sites for the conduct of modern research. It is true that excellent research and quality education programs do continue in many laboratories. Those closest to the scene know, however, that increasingly serious problems plague our research enterprise, problems that, left unaddressed, will undermine our future capacity in research and advanced education.

I would like to address five areas which are appropriately considered in the context of the FY 1986 DOE budget request: basic energy science research programs, graduate student support, career enhancement initiatives for young faculty, research instrumentation and research facilities.

BASIC RESEARCH PROGRAMS

The basic research programs of the Department of Energy have and continue to make significant contributions to this nation's technological advancements and, in the process, train the graduate students who will carry forward the nation's research and development efforts. The programs of the Office of Energy Research (OER) provide over 80% of DOE's total funding of direct awards to universities for the conduct of R&D. These programs support important long-term basic science research in several disciplines including high energy physics and nuclear physics. Continuity of support is essential to the long-term nature of this research.

The proposed budget for Basic Energy Sciences is $409.8M, a $12.8M (3%) reduction from current levels. The proposed budget for General Science programs is $685.4M, a $45.3 (6%) reduction from current levels. The other OER research programs are slated cuts in the range of 3%-11% in the proposed FY 1986 budget. In the current climate of fiscal restraint, these proposed reductions may appear modest and tolerable. In fact, even minor budget cuts can bring serious consequences for the stability of research groups doing long-term research. If a uniquely qualified group is forced to disband due to unreliable funding, that group generally could not be reassembled at a time when economic conditions improved.

The proposed DOE budget does include reductions in the budgets of several of the national single-purpose and multi-purpose laboratories. These research labs carry out some of the Department's civilian research programs as well as house experimental facilities used by the wider scientific community. While effects of the proposed budget cuts vary from laboratory to laboratory, I can summarize some general consequences for the scientific user community that would result.

Proposed operating budgets below current levels will result in staff lay-offs and the less efficient operation of the laboratories. Experimental facilities, such as accelerators, would be operated at reduced capacity resulting in the availability of less time for use by the scientific community. Proposed budget cuts for plant and capital equipment would prevent the laboratories from taking full advantage of the great national investment already made in facilities and machines. In some cases, planned construction would be slowed down and required machine "parts" would not be purchased.

Graduate students and post-doctoral researchers in science and engineering who associate themselves with laboratory programs would find fewer available opportunities in 1986. Research conducted in these laboratories benefit from the fresh insights of talented graduate students and recent graduates continuing full-time research appointments. For these individuals, this time allows for peak efforts devoted to research before other responsibilities divert the focus of their efforts. The labs, in turn, can provide unique training opportunities and facilities for the students.

While we understand that the DOE budget cuts were proposed as part of the Administration's plan to reduce federal deficits, we believe that the Administration's FY 1986 budget request for civilian R&D programs reflects short-term budgetary decisions that may generate unintended policy consequences for U.S. leadership in science and technology.

GRADUATE EDUCATION

The federal commitment to excellence in engineering and science education supported by federally funded fellowship programs has eroded. In 1983, federal agencies supported only 20% of the number of graduate fellowships awarded in 1968. Of those supported, only 1,600 were in engineering and science. DOE supports only about 25 such fellowships in narrowly defined fields. We understand that the Department of Energy attempted again to expand

its graduate fellowship program in the development of the FY 1985 budget, but it reportedly was not supported by the Office of Management and Budget. It is unfortunate that this attempt failed. We believe that the DOE should strengthen its commitment to graduate education, and we urge you to consider the need for a DOE graduate fellowship program.

The best approach, we suggest, would be a two-part program to provide for (1) portable, three-year graduate fellowships awarded to students based on their demonstrated achievements and future promose, and (2) department traineeships competitively awarded to strong departments that carry out DOE-funded basic research programs. Such a program would link talented students to proven, productive departments in a way that would strengthen our national capacity for both research and advanced education in energy-related fields. Both the National Science Foundation and the DOD's Office of Naval Research (ONR) have strong merit-based, portable graduate fellowship programs in place and both can be considered as good models.

YOUNG FACULTY

Increasingly serious obstacles face young researchers beginning research careers in basic science. The 1980 AAU Report to NSF, "The Scientific Instrumentation Needs of Research Universities," provides a striking example of the increased costs necessary to establish new research programs. The data now are somewhat dated, so the message they convey should be interpreted as a conservative estimate of the present cost. In the case of a leading chemistry department the costs associated with equipping a new faculty member to conduct frontline research in the field of synthetic organic chemistry increased from $116,500 in 1970 to $741,000 in 1979. Inflation accounts only for part of the rising costs. Imposed on the rising baseline of inflation are the much larger costs resulting from advances in existing instrumentation and the development of totally new, more powerful, and, therefore, more productive instruments. Promising young researchers are experiencing increasing difficulty meeting these "start-up" costs.

The National Science Foundation has instituted a new program, the Presidential Young Investigators (PYI) Program, to provide recent Ph.Ds with five-year awards averaging $30,000 to be matched by private sources. These awards enable the young faculty members to begin research immediately with an opportunity to sharpen skills in their early years. For some, it will mean the difference between remaining in the academic environment and leaving to pursue better funded alternatives. The Navy is proposing to initiate a new program, similar to NSF's, to identify and encourage young faculty to take an active role in Navy research programs.

The Department of Energy should be encouraged to start a comparable program targeted on enhancing the human resource pool in energy-related fields.

RESEARCH INSTRUMENTATION

Another problem concerns the tools of science and the instruments used to perform modern research and to train young scientists and engineers. Universities are having increasing difficulty conducting competitive research, training students to a level of sophistication employers require due to obsolete research instrumentation. Modern equipment is essential for developing new research areas for exploring the questions identified at the rapidly advancing cutting edge of current disciplines.

The condition of research instrumentation in universities has been deteriorating seriously for many years. The 1980 AAU report referenced earlier showed that the median age of instrumentation surveyed in 15 universities was twice that of leading commercial laboratories. In the past five years the situation has improved little. Recently NSF completed a larger survey of the condition of research equipment in 43 universities. It shows that 25% of the equipment now in use is obsolete; only 16% is state of the art; half of the equipment is at least six years old.

The magnitude of the problem is illustrated by DOE's research instrumentation program. For this year's program, the Department has received 160 applications from 97 institutions. The average application request is $265,000; the requests total $42.3M. With its current budget of $5M, the Department estimates that it will be able to make 8-15 awards.

The FY 1986 budget requests $4.5M to continue the essential effort to upgrade university research instrumentation and equipment, started by DOE in FY 1984 at $4M. We commend the Department for beginning to do its part to address the needs of obsolete university research instrumentation. We encourage the committee at a minimum to support DOE's program for university research instrumentation in FY 1986.

OBSOLETE FACILITIES --THE OTHER SIDE OF THE EQUIPMENT PROBLEM

Any discussion of the research instrumentation needs of universities is incomplete if it does not also address the interrelated research facilities problem. Modern research instrumentation increasingly requires specialized environments, and many of our research laboratories are obsolete and inadequate settings for modern science. They often require extensive and costly modernization or replacement. It is noteworthy that the DOE has not only recognized, but is addressing, the serious problem in its own laboratories. Through the multiprogram, general-program facilities budget, the Department continues to rehabilitate and replace outdated facilities at its multiprogram sites.

According to recent NSF figures, total national expenditures for science and engineering facilities and equipment for R&D and instruction now total about $1 billion per year. However, plant expenditures by universities have been essentially fixed in real terms since 1968. (A 1981 AAU survey found that institutions now are able to meet only about half of their accumulated facilities deficit.) Further, the Federal share of the facilities modernization effort declined from 32% in 1966-68 to 16% in 1981. In constant dollars, Federal obligations for R&D plant decreased about 90% between 1966 and 1983. In terms of policy, investment in the conduct of federal research programs has been decoupled from investment in the capital base necessary to reach our long-term research objectives--a mistake industry clearly could not afford to make.

We believe it is time for the leading agencies of the federal government that support the nation's basic science programs to assist in the rehabilitation of those laboratories essential to each agency's research mission and goals. Last year, the Graduate Education Subcommittee of the National Commission on Student Financial Assistance (a bipartisan panel created by P.L. 96-374, the Education Amendments of 1980) completed its report, "Signs of Trouble and Erosion: A Report on Graduate Education in America." In unanimously endorsing the report, the bipartisan full Commission affirms the seriousness of the instrumentation and facilities deficits and calls for an investment strategy for research instrumentation and facilities rehabilitation. We commend that report to the Committee's attention.

The long drought in the funding of research facilities has led some to press for standards of judgment governing decisions about scientific facilities that are different from the standards that apply to scientific projects. They are not. The most important judgment about a proposed scientific building has to do with the quality of the science that will take place within it. That decision is best made by good scientists.

A serious debate leading to concrete proposals for a facilities reinvestment strategy is needed. Until funds are made available for which institutions can compete on the basis of the quality of their programs, we risk serious damage to the structure that has produced the finest basic science in the world. We hope that this committee will consider the facilities problem as part of its continuing deliberations on the research equipment problem and the FY 1986 Department of Energy Budget Request.

PEER REVIEW

The future return on all of these essential investments, of course, will be determined in large part by the soundness of the decisions that the Congress and the Department of Energy make in the award of the funds. The funds ought to be awarded on the basis of scientific merit in open competition among all interested and qualified parties. Final judgments ought to be formed in an objective and informed manner, free from any actions by particular individuals or institutions that could serve to make the award of such funds a matter of political influence rather than the quality of the work to be done and the capacity of competing applicants to carry out the work at the highest level.

I urge that the Committee insist that decisions about funding be guided by the goal which I know we share--the need to produce the highest quality science and engineering of which we are capable as a nation.

Thank you for the opportunity to submit this testimony to the subcommittee.

Statement of KMS Fusion, Inc.

Summary

The 1986 Administration budget proposal calls for a 60 percent reduction in funding for the Inertial Confinement Fusion (ICF) program. With the Nova facility starting operation, and significant technical progress in the classified portion of the program, we feel that such drastic budget reductions are counter-productive, and will deprive the country of the benefits of the billion-dollar-plus investment made to date in the ICF program. KMS Fusion urges the committee to restore funding for the ICF program to a productive level.

KMS Fusion plays a unique role in the ICF program, as the primary source of classified physics data supporting the Nova experiments program, and as a major supplier of target technology. We propose to modify our laser facility, Chroma, to increase our capability to conduct ICF target physics and x-ray laser experiments. This enhancement will provide the program with a low cost, high data-rate facility for physics data, and will free up the $180 million Nova facility for the high-value ICF and weapons physics experiments for which it is uniquely suited. KMS Fusion requests a 1986 budget of $15 million in operating funds, and $4.6 million in capital equipment, to carry out the proposed facility modification, while continuing our research program.

The Inertial Fusion Program

Fusion is the process which generates the sun's radiant energy, and which gives the hydrogen bomb its awesome power. In fusion, the fuel, consisting of the heavy isotopes of hydrogen (deuterium and tritium), is heated to a temperature of 100 million degrees, hotter than the sun's interior. At this temperature, the hydrogen nuclei fuse together to form helium, with an attendant release of energy. The fuel must be confined, i.e., held together long enough so that the energy released exceeds the energy invested to heat the fuel to the reaction temperature.

Inertial Confinement Fusion (ICF) is one approach to confining and heating fusion fuel. Energy from a powerful laser or particle beam is concentrated on a spherical shell containing the fuel. The fuel is heated and compressed in the process, until thermonuclear conditions are achieved at the center, igniting the fusion reaction. The surrounding compressed fuel is then ignited by a propagating thermonuclear burn wave, releasing energy from the fusion reaction.

Inertial Fusion research has been supported by the Congress for over a decade, with two objectives. In the near term, the ICF program provides

information about thermonuclear physics which is of vital importance to the nuclear weapons program. In the long term, ICF is viewed as an alternative path to harnessing fusion as a source of energy. In the Department of Energy, the ICF program is administered by the Office of Inertial Fusion, under the overall direction of the Assistant Secretary for Defense Programs.

The hydrogen bomb demonstrates that inertial fusion is feasible on a large scale. The objective of the ICF program is to demonstrate that thermonuclear ignition can be achieved on a laboratory scale, driven by a laser or particle beam. The ICF program has constructed three major facilities to assess the feasibility of inertial fusion. These are Antares, a 40 kilojoule carbon dioxide laser at the Los Alamos National Laboratory, Nova, a neodymium-glass laser producing 100 kilojoules of infrared light, at the Lawrence Livermore National Laboratory, and PBFA-II, a light-ion beam facility currently nearing completion at the Sandia National Laboratory.

Last year, Congress called for a high-level review of the ICF program by the administration. A prestigious panel of scientists has been assembled, under the auspices of the National Academy of Sciences, to conduct this review. They met here in Washington early in March, and heard presentations from the Office of Inertial Fusion, and from each of the six participating laboratories. The panel will visit each of the ICF laboratories in the weeks to come. The NAS review committee is scheduled to submit an interim report this summer, and a final report by February 1986.

The Nova Project

In 1979, the Department of Energy approved the construction of the Nova laser at LLNL. Nova was originally conceived as a 20-beam, neodymium-glass laser, capable of generating 200-300 kilojoules of infrared light in three-billionths of a second (3 nanoseconds). However, DOE only approved construction of a ten-beam system, designed to produce 100 kilojoules of infrared light, but with frequency conversion capability, to convert the output to visible light. The total project cost for Nova is approximately $180 million. Nova can operate either with two beams or ten, and is equipped with two experimental target chambers.

There are two basic approaches to driving an inertial fusion target. The laser light can impinge directly on the target (direct drive), or can be converted to x-rays in an enclosure ("hohlraum") containing the fuel mass, and the x-rays used to drive the target (radiation drive). Radiation-driven targets offer better uniformity of illumination than direct-drive targets, but sacrifice efficiency at lower laser energies. Both approaches are currently under investigation in the ICF program. Nova experiments will emphasize the radiation-driven approach, which also provides important information on the physics of nuclear weapons.

In order to ignite the fusion reaction, it is necessary to heat the fuel to 100 million degrees, and to compress it to 1000 times the density of liquid hydrogen (1000 x L.D.). Nova experiments are unlikely to achieve both conditions simultaneously. However, it is expected that targets will be compressed to 500 x L.D. in the first year of Nova's operation, at a temperature lower than that required for ignition. Subsequent Nova experiments are expected to achieve 1000 x L.D., at sub-ignition temperatures. Data from the Nova experiments, taken together with information obtained from other sources in the program, will define the driver and target requirements for both ignition and high-gain targets. These experiments will thus provide the basis for evaluating the applicability of ICF to both its military and energy objectives, in the 1986-1987 time frame.

KMS Fusion's Contributions to the ICF Program

KMS Fusion is located in Ann Arbor, Michigan, and is the only private participant in the ICF program. KMS Fusion has played a major role in the development of inertial fusion. The company began fusion research in 1971. Ten years ago, the world's first successful demonstration of laser-produced thermonuclear reactions took place at KMS Fusion's laboratory, in Ann Arbor, Michigan. Since then, the company has contributed many other innovative "firsts" to the program. KMS Fusion was the first to carry out experiments with short

wavelength light, a technique which has been subsequently adopted world-wide. The company pioneered the use of frozen (cryogenic) fuel in ICF targets, a complex technique generally acknowledged to lead to improved target performance. Until 1983, when LLNL conducted its first cryogenic target series, KMS Fusion was the only laboratory in the world to carry out cryogenic experiments. KMSF scientists had demonstrated, in 1981, that cryogenic targets perform better than gas-filled targets. Most recently, in 1983, the company developed a multi-frame holographic interferometer for visualizing the evolution of material surrounding the surface of a target. This instrument is capable of providing stop-motion images in a fifty-billionth of a second. Up to four such images can be recorded during each experiment, which lasts less than a billionth of a second.

The company is a major supplier of targets and target components within the ICF program. The target fabrication effort comprises roughly half of the company's activities. This effort supports the internal research program at KMS Fusion, and also produces target materials and components for the other participants in the program. Several European laboratories also buy the sub-millimeter-sized glass Microshell® fuel containers that KMS Fusion has developed for fusion use. In addition to target fabrication, the company is pursuing long-term research to develop the large targets needed for the critical experiments to be performed on Nova. These targets involve several techniques and technologies developed at KMS Fusion, including cryogenic fuel, and various new target materials.

In addition to the company's efforts in material science and target fabrication, KMS Fusion operates a highly productive experimental facility, the Chroma laser. Chroma is a two-beam laser, capable of producing up to 800 joules of infrared light in a pulse of one billionth of a second duration. This energy can be efficiently converted to visible light, which couples more effectively to the fusion target. The laser is equipped with a pulse stacker, which allows us to synthesize pulses of arbitrary temporal shape, an important parameter for optimal target compression. The Chroma laser is outfitted with three experimental areas. This allows us to carry out one set of experiments, while setting up other experimental configurations. At present, one experimental area is devoted to a unique optical system, devised and patented by KMS Fusion, which enables us to illuminate a target uniformly from all directions, using the light from the two beams of Chroma. Either gas-filled or cryogenic targets can be imploded in this target chamber. The other experimental areas are used to explore the physics of radiation-driven targets, and to conduct other experiments on laser-matter interaction.

KMS Fusion's Unique Role in the ICF Program

In 1979, KMS Fusion was designated as a support laboratory for glass laser experiments, and since then, its efforts have been closely coordinated with those of the lead laboratory for glass laser experiments, LLNL. About 850 experiments were carried out on the Chroma laser facility in 1984. KMS Fusion is the only laboratory other than LLNL conducting glass laser experiments on radiation-driven targets. With its highly flexible experimental facilities, operating at a high data rate, and backed up by a full spectrum of capabilities in data analysis, target design, target fabrication and diagnostic instrumentation, KMS Fusion has emerged as the primary source of supporting physics data for the "flagship" facilities at LLNL, Nova, and its predecessor, Novette.

Experiments are carried out at KMS Fusion by our scientific staff, often with the involvement of researchers from LLNL and other laboratories. Over the last two years, LLNL-KMSF teams have conducted experiments on the use of x-ray spectroscopy to diagnose the density and temperature of target plasmas, the effect of classified target construction on hot electron generation, and the characterization of x-ray sources used for target analysis. In preparation for the historic experiments conducted at LLNL last year, which demonstrated soft-x-ray laser action for the first time, joint LLNL-KMSF-NRL experiments were conducted on the Chroma facility to establish which candidate materials were most likely to succeed in an x-ray laser experiment, and how the plasma cloud surrounding the target would evolve. Our internal research program is also directed toward providing the physics and technology data base required for the proposed Nova experiments. During the past two years, we have measured the

transport of energy in target plasmas, using spherical illumination, which creates nearly one-dimensional target conditions which are much more readily analyzed; and we have developed and applied novel diagnostic techniques to measure the distribution of energy and the occurrence of deleterious plasma processes in hohlraum targets. We have continued to pioneer the development of cryogenic targets, and have recently solved the difficult problem of stabilizing a uniform layer of liquid D-T in a large, Nova-sized target.

KMS Fusion maintains a small effort on the development of the Oxygen-Iodine laser. If energy can be extracted from that laser efficiently in a short pulse, it could provide the required combination of short wavelength, high repetition rate and high efficiency required for all ICF applications. Over the past two years, we have received support for further development of this laser from NASA, and the Air Force Weapons Laboratory.

We requested funds in FY 1985 to initiate the design and construction by KMS Fusion of a cryogenic target facility for the University of Rochester. During the summer of 1984, the University of Rochester asked us to accelerate that project, to allow us to deliver the finished target assembly to them early in Calendar Year 1986. By redirecting a portion of our program funds, we were able to satisfy their request. Our cryogenic technology will be installed on the Omega laser facility at the University of Rochester during the first quarter of 1986, and will be ready for operation at that time.

KMS Fusion's 1985 Budget Request

As in previous years, all the participants in the ICF program look to Congress to restore program funds deleted in the Administration's budget request. At the $70 Million level proposed by the Administration, we cannot operate the facilities that exist in the program, and therefore cannot progress toward the program goals. It is doubly ironic that we are confronted by the spectre of a disastrous budget cut just as the Nova facility starts operation, and as the National Academy's review committee starts its deliberations. For several years, KMS Fusion has testified before Congress that a modest increase in KMS Fusion's funding would enhance the productivity and cost-effectiveness of the ICF program, especially in the use of its premier facility, Nova. As we have noted in this testimony, our facility, with its flexibility, full spectrum of supporting services, high data rate and low operating cost, is ideal for conducting those experiments which do not require the full capability of the facilities at the national laboratories, but which provide the data base needed to ensure the success of the high-value experiments carried out on the large facilities.

In 1986, we are proposing to modify our laser, Chroma, to increase its output from its current level of 500 joules of visible light to 2500 joules, in a one nanosecond pulse. We have provided the committee with a detailed proposal for this modification, which is a classified document. We request that our proposal, which has been submitted to the committee staff, be incorporated into the record. This modification will entail a one-time capital cost of $4.6 million. In addition, we are requesting operating funds of $15 million.

We feel that this modification is extremely important in view of the climate of cost consciousness which surrounds these hearings. The modified Chroma laser would continue to operate at a shot rate of 6-10 shots per day, with only minor increases in operating costs. At a rate of 850 shots per year (our actual 1984 shot rate), and a five-year lifetime, with an operating cost estimated to be $4 million per year, the total cost of an experiment on the modified Chroma will be about six thousand dollars. For the sake of comparison, the corresponding figure for a Nova shot will be over $200 thousand.

Of course, Nova will produce twenty times the energy of the modified Chroma. As a result, LLNL will be able to carry out experiments which cannot be conducted on any other facility. These must be high-value experiments in target implosion physics, weapons physics, and weapons effects. In our classified proposal, we show that many of the supporting experiments involving energy transport, laser-plasma interactions, and x-ray laser development can be carried out on Chroma at far lower cost, making Nova available for those experiments to which it is uniquely suited.

We propose to continue operating Chroma while the modification is underway. We do not expect the changeover to the modified system to interrupt our experimental schedule for more than about one month. We shall continue our work on target fabrication, supplying targets and target components to the other laboratories in the program, on diagnostic development, and on the development of the Oxygen-Iodine laser.

In a period of heightened cost-consciousness, the true measure of economy lies in enhanced productivity. Cutting the program funding in half is disastrous, because it reduces the productivity to zero. The funding level which we request will truly be cost-effective, both by increasing the utility of the KMS Fusion facility, and by enhancing the productivity and availability of the Nova laser.

JOINT STATEMENT OF LOUIS C. ROTUNDO AND DAVID L. BLOCK, FLORIDA SOLAR ENERGY CENTER, AND BHARATAN R. PATEL, HANOVER, N.H.

I first wish to thank Chairman Bevill and Congressman Akaka for this opportunity to discuss the potential for generating electricity and/or fresh water using open-cycle ocean thermal energy conversion (OC-OTEC). The majority of my comments today are extracted from the executive summary of the final report of an OC-OTEC study conducted last year by the Florida Solar Energy Center (FSEC) and Creare, Inc. of Hanover, New Hampshire. This study was done for the Solar Energy Research Institute (SERI) and is listed at the end of the written remarks as Reference 1. My second source of information comes from an OC-OTEC report on Florida Coastal Site Analysis also done last year (Reference 2).

My purpose today is to address three areas concerning OC-OTEC. These are:

- Examine the most promising of the OC-OTEC technologies
- Examine OC-OTEC as applied to the state of Florida
- Examine what research and development remains to be done

OC-OTEC is the concept of generating electricity and/or fresh water using the temperature difference between surface and deep ocean seawater. Its attractiveness is due to the vast amount of ocean energy available and the minimal ecological impact. OC-OTEC is ideally suited for many locations which have a need for alternative electricity and freshwater production. Florida is a prime example of this need.

The OC-OTEC concept can be briefly described as follows. Warm (25°C typical) surface seawater is introduced into the evaporator, which operates at a vacuum pressure level. A small percentage (0.5%) of the seawater flashes to produce steam which is expanded through a turbine connected to an electrical generator. The steam is condensed in a condenser supplied with cold (5°C typical) seawater from depths of approximately 1000 m. A surface condenser is used if both electricity and freshwater production are desired.

A more efficient direct-contact condenser is used if only electricity production is desired.

The selection of the seawater flow rates and the temperature drops across various components of the system depends on the electricity and/or freshwater production desired. For example, a trade-off must be made between the temperature drop across the evaporator (which affects the amount of steam generated) and the temperature drop across the turbine (which affects the amount of electricity produced).

Several plant types have been suggested. For example, the plant may be land-based (or shallow-water), shelf-mounted, floating, or moored. We at FSEC are presently looking at another concept which is land based and uses the hot water from an existing utility power plant and the cold water from a deep well. Deep wells in Florida have been carefully studied for the past six (6) years and are drilled for the injection of treated sewage. Our concept is a new use for the deep well technology.

The greatest number of potential sites exists for the floating plant with a suspended cold-water pipe (CWP). However, there are major unresolved issues on the effect of ocean dynamics on the CWP/platform connection. The moored design attempts to alleviate the CWP/platform connection problem by providing the option to disconnect the CWP from the platform in bad weather. In addition, the CWP bending stresses are believed to be significantly less for the moored design than for the suspended design. However, the moored plant has ocean depth restrictions. Other disadvantages of the floating or moored plant types are related to product transportation and the effect of ocean dynamics on plant operation.

The shelf-mounted or land-based plant types reduce or eliminate the product transportation and ocean dynamics/plant operation issues. Except for the CWP, the design and construction are within current state-of-the-art technology. However, longer pipes are required, which increases costs and reduces the number of potential sites.

The objectives of the yearlong project conducted by FSEC and Creare were to:

1) Assess the economic and technical viability of OC-OTEC for the production of electricity and/or fresh water based on the current state of the art;

2) Develop conceptual designs of optimized OC-OTEC plants that produce electricity and/or fresh water for plant sizes that are economically attractive;

3) Identify the research issues that must be resolved before a commercial plant can be built.

Oceanographic data for six potential sites were evaluated and "generic" site characteristics were developed. Florida sites were emphasized. The generic site has a 20°C temperature differential between the ocean surface and depth of 1000 m. This temperature differential occurs at a distance of 5 km from shore. Current and projected prices and requirements for electricity and water at potential sites were obtained. The state of the art of components comprising the OC-OTEC plant was reviewed. Design options for each component were identified. The highest performing, least costly, and least technically uncertain design for each component was selected. Component costs and performance models were then developed and integrated into thermoeconomic system models for single- and double-stage OC-OTEC plants that produce electricity and/or fresh water. A computerized optimization procedure was developed to obtain optimal (minimum cost) plant configurations for the production of electricity and/or fresh water. All plant types--floating, moored, shelf-mounted, shallow-water and land-based plants--were evaluated.

Based on the state of the art and typical characteristics of potential sites, the primary thrust of the program was directed towards shallow-water and land-based plants. The shallow-water/land-based plant configurations selected had a 5-km long cold-water supply pipe and a 1-km long discharge pipe for the evaporator and condenser. A temperature differential of 20°C was assumed. Five plant configurations were analyzed--two single-stage plants and three double-stage plants.

In a single-stage plant, a single flash evaporator is used to produce steam from the warm surface seawater. All the steam is expanded through a single turbine and condensed in a single condenser. The two single-stage plant configurations analyzed differed only in the type of condenser used. One configuration had a surface condenser and was able to produce electricity and/or fresh water. This was the baseline plant configuration for which conceptual designs were developed. The second single-stage plant configuration had a direct-contact condenser (which is considerably cheaper than a surface condenser) and could produce only electricity.

In a double-stage plant, two stages of flash evaporation are used. The steam from each flash evaporator is routed to separate condensers. A turbine is placed in one or both steam paths, depending on the mix of electricity and fresh water desired. The advantage of the double-stage plant is that it offers better overall efficiency and greater operational flexibility. In one configuration analyzed, both condensers were surface condensers, and a single turbine was interposed between the second-stage flash evaporator and

condenser. In the second configuration, the second-stage condenser was a direct-contact condenser. These configurations were biased toward the production of fresh water. The third double-stage configuration was for electricity production only, and both condensers were direct-contact condensers.

For each of these five configurations, captial costs for optimal (lowest cost) designs were obtained for a range of electricity and fresh water outputs--1 to 100 MWe and 0 to 4 m^3/s (12.2 M ft^3/day) of fresh water. The cost of electricity and fresh water was calculated based on these capital costs; and assumed plant life of 30 years, maintenance costs similar to those of fossil fuel power plants, an 85% capacity and a 5%-15% real rate of return on investment.

The results showed that the capital cost per unit output drops rapidly with increasing plant size up to a plant size of about 10 MWe. The capital cost continues to decrease gradually with further increases in plant size. Thus, the greatest economics of scale are achieved in plant sizes of 10 to 20 MWe.

The cost of electricity as a function of plant size was also evaluated with the current costs of electricity at several potential OC-OTEC sites. The result showed that the cost of electricity from OC-OTEC plants of around 10 MWe compares favorably with the current electricity costs at most of the sites. (OC-OTEC generated costs being between 5-10¢/KWh.) Plants in the 2 to 5 MWe size range were also shown to be competitive in the U.S. Trust Territories and the Virgin Islands.

For the single-stage plant with a surface condenser, fresh water is produced. If it is assumed that the fresh water produced is sold at the current prices, the resulting revenue reduces the cost of electricity. Taking into account the revenue from fresh water, the results show that at potential island sites, such as the Virgin Islands, OC-OTEC is competitive even at very small plant sizes. The value of the water essentially gives free electricity. This is an important conclusion, since most of these sites have incremental power requirements in the range of 2 to 10 MWe; therefore, small OC-OTEC plants can economically fulfill their electricity and water needs.

Sensitivity studies were performed to determine the uncertainty in plant economics introduced by variation in site characteristics and uncertainty in the cost and performance of individual components. The plant economics were sensitive to the magnitude of the available temperature differential and its distance from shore. The plant costs increase with decreasing temperature differential and with increasing distance from shore. However, because oceanographic data indicate that the 20°C temperature differential and the 5 km distance from shore assumed for the baseline model were conservative for most island sites, the costs presented here are also conservative.

The sensitivity analysis of uncertainties in component performance showed that plant costs were most sensitive to turbine and generator efficiencies and flash evaporator effectiveness. A ±5% variation in plant costs occurred as these parameters were varied over the expected value range. Cold-water pipe cost was the only parameter that had a significant effect on overall plant costs. Varying the cold-water pipe cost by ±50% around the baseline value caused plant capital costs to vary by ±34%. Reliable data for cold-water pipe costs are scarce. The more reliable data are for small diameter (up to about 2.4 m diameter) cold-water pipes that have actually been procured and deployed. The baseline costs assumed in this work were conservative with respect to the smaller diameter pipes. Recognizing that multiple small diameter pipes can be used (at greater expense) instead of a single larger diameter pipe, an upper bound of uncertainties in cold-water pipe costs was obtained. The overall uncertainty in plant costs due to all the stated factors was no greater than 35% for plants of 10 MWe capacity or less.

This thermoeconomic analysis shows that plants in the size range of 10 MWe are attractive in terms of near-term application potential. Based on this analysis, a conceptual design for a 10 MWe, shallow-water or land-based, single-stage OC-OTEC plant was developed. This plant utilizes a surface condenser and would have a net electrical power output of 10 MWe and a fresh water output of 0.24 m^3/sec (0.73 M ft^3/day). The plant had a 4.2 m diameter cold-water pipe and a 17 m diameter turbine. Both the cold-water pipe and turbine size are beyond the current state of the art. Therefore, a conceptual design was developed for a modular 10 MWe plant utilizing multiple turbines instead of a single large turbine. It was found that utilizing multiple turbines instead of a single large turbine has a minimal effect on plant costs. Use of multiple cold-water pipes can increase plant costs by about 30%-40%. However, the economics were still favorable in many potential island sites. The main advantage of the modular plant is that its feasibility is not dependent on significant advances in the state of the art for design, fabrication and deployment of large diameter cold-water pipes and turbines.

There are several research issues related to other plant components that must be resolved before a small-scale OC-OTEC plant can be built. These issues can be placed in three categories--component R&D, adaptation of existing technology and system integration. Component research and development is required for the flash evaporator, passive deaerator, direct-contact condenser and surface condenser at prototypical OC-OTEC conditions. Most of the research on these components has been limited in scope and at laboratory scale. Further research is recommended to address the design needs discussed in this report.

Other OC-OTEC components such as the turbine, seawater pumps, and noncondensible compressors are commercially available at present in sizes suitable for small OC-OTEC plants. However, existing designs for these components will have to be modified to suit the OC-OTEC application. This adaptation of existing technologies will be required and should be pursued.

Finally, system integration related issues arise from the fact that the OC-OTEC plant is a highly coupled plant because of the very small temperature and pressure drops available. Significant thermal and fluid dynamic interactions will occur between the components comprising the plant. Key issues are the minimizing of pressure drops and ensuring adequate flow distribution, system start-up, stability and control. To address these issues, a fully integrated OC-OTEC test facility will be required. It is recommended that such a test facility be developed at a sufficient scale so that results from it can be used to confidently develop commercial plants.

Finally, we want to mention the concept that we are presently evaluating. This concept uses the warm water from an existing power plant and the cold water from deep wells of approximately 1000 m for an OC-OTEC facility and appears very favorable at this time. Florida Power and Light Company (FP&L) of Miami, Florida, the nation's fifth largest private utility company, has agreed to help us examine two of their power plants for this OC-OTEC application. Both of these plants are in the South Florida area. At this time, the FP&L nuclear plant site of Turkey Point appears the most feasible. We have also just reviewed the deep well data from 2 deep well sites and can confirm cost data in drilling deep wells of 0.6 m in diameter. There are presently 30 deep wells of 0.6 m in diameter pumping treated sewage in the South Florida area. Our concept would be to draw cold sea water from a deep well into the boulder zone strata below Florida.

We believe the cooperative effort started by FSEC with FP&L is the first step to involve utility companies with OC-OTEC. If OC-OTEC is to become a reality, utility companies must be convinced of the concept. Secondly, the deep well and utility cooperative concept we are investigating offers many additional benefits. These additional benefits are:

- The mixing of warm water from the utility plant with cold water from deep wells will allow the utility companies to operate at higher water temperatures. Thus, the utility company can increase the efficiency of the existing utility power plant.

- The OC-OTEC plants are land based with minimum length cold-water pipes. Also, the deep well drilling technology is existing and well proven.

- There is reason to believe that the cold water is rich in nutrients, thus, a new mariculture industry could be developed.

STATEMENT OF GAS RESEARCH INSTITUTE

I appreciate the opportunity to submit testimony addressing the Gas Research Institute's (GRI) views and FY 1986 budget recommendations for gas-related research in the Department of Energy (DOE). GRI is recommending a program of long-term gas research under this subcommittee's jurisdiction in FY 1986 for a total of $54 million. Central to this recommendation is the fact that GRI is planning to submit a research plan to the FERC requesting $164 million in 1986 to fund mostly near-term gas research. Included in the $54 million recommendation, GRI is proposing a redirection of $35 million within the $1.74 billion budget request for DOE's Office of Energy Research programs to establish a viable program in geosciences related to deep source gas, methane hydrates, geopressured gas, and related materials technology. These resources have been estimated to contain at least 2,000 trillion cubic feet (Tcf) of recoverable gas--the equivalent of more than a 100-year supply at current consumption rates. Despite this potential, DOE programs in the Office of Energy Research are nearly totally dedicated to nuclear-related research with less than $10 million allocated for petroleum geosciences. Establishing this generic geosciences research program should become a top national energy priority. The remaining funds in the $54 million recommendation are for gas-related biomass research ($18 million) and the liquified gaseous fuels spill test facility ($4 million).

GRI is an independent, not-for-profit scientific research organization that plans, manages, and develops financing for a cooperative research and development (R&D) program for the mutual benefit of the gas industry and its present and future customers. The R&D program is implemented through contracts with research organizations, engineering and other professional service firms, universities, energy companies, and manufacturers. Even though GRI is not a government contractor and does not accept federal funds, GRI cofunds and coordinates many of its research programs with DOE; therefore, the actions of Congress on the FY 1986 DOE budget have a direct impact on the gas industry's research program.

NEED FOR REVISED FEDERAL ENERGY R&D PRIORITIES

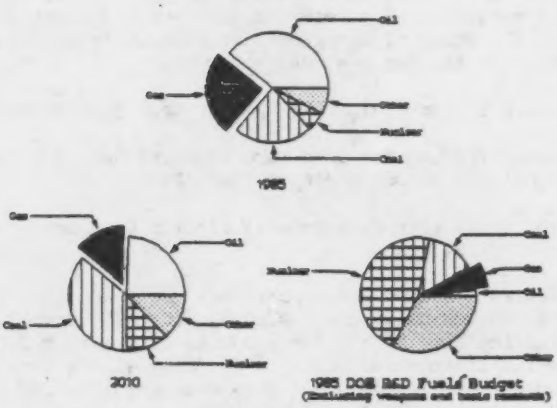
The urgency in establishing a consistent federal policy to provide adequate funding for long-term fossil fuels research is evident when you examine where the nation will obtain its energy supplies during the next 25 years. Both private and federal forecasts agree that the U.S. will continue to rely on oil and gas for over 60% of its energy needs in the year 2000 and approximately 40% in 2010.

A revealing illustration of the imbalance between DOE funding priorities and the actual national research needs is to contrast DOE FY 1985 R&D budgets by energy resource compared to current and future energy resource utilization. As shown, DOE would assign only 20% of its funding to fossil fuels research, yet the U.S. is projected to meet 75% of its energy needs in the year 2010 from oil, gas, and coal. It is impossible to have a balanced national energy program without a sharp shift in research funding priorities.

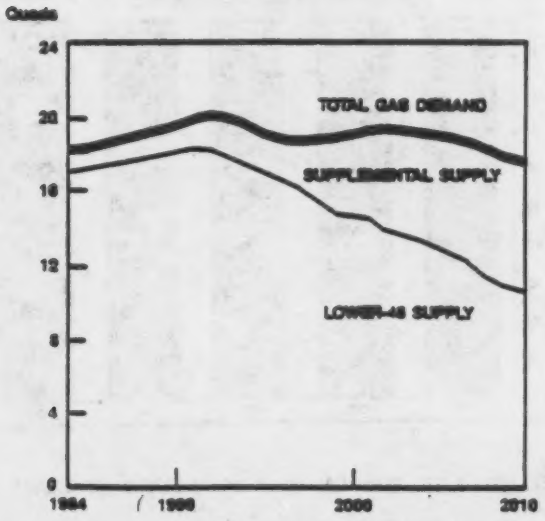
NEED FOR DOE FUNDING OF NATURAL GAS R&D

Natural gas will continue to maintain an important role in a highly competitive energy mix throughout the remainder of the century. The 1984 GRI Baseline Projection of U.S. Energy Supply and Demand, 1983-2010 shows that the role of gas after the year 2000 will diminish without additional research to develop supplemental gas supplies based on new and improved technologies. In the post-2000 portion of the Projection, the demand model exhausts the gas supplies provided at the then-prevailing average market clearing price while there is still unfulfilled demand that could be captured by gas at this price.

U.S. ENERGY NEEDS



GAS SUPPLY
1984 GRI Baseline Projection



Establishing the technology base to fully develop these supplemental supplies requires a lead time of 10 to 15 years. The current gas deliverability surplus and softening of world oil prices provides us the opportunity to pursue this critical technology development in an orderly fashion rather than on a crash basis. While we have the time, we must seize this opportunity to strengthen our domestic energy production potential.

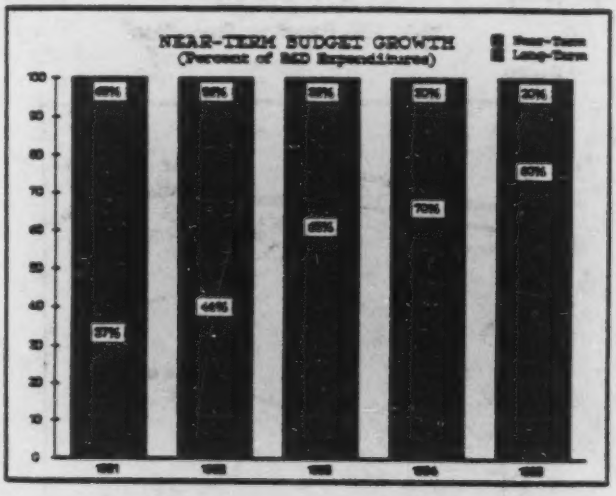
GAS RESEARCH INSTITUTE'S 1986 BUDGET

In contrast to the DOE policy of reducing funding of long-term gas research, the response of the gas industry to the federal R&D policy of industry's funding more of its own near-term research has been rapid and very impressive. GRI will propose to its Board of Directors in April a 1986 budget of $164 million--an increase of $32 million from the FERC-approved 1985 budget of $132 million.

National energy R&D policy is a major factor influencing the GRI R&D program. In response to the evolution of government energy R&D funding policy over the past four years, GRI's Board of Directors, with input from advisory committees, adopted the following strategy:

- GRI should assume a leadership role in near-term gas-related R&D.
- GRI should reduce funding for long-term research but continue to seek coordinated funding with DOE where appropriate.
- GRI should expand its already extensive efforts to obtain coordinated funding from industry.

As the level of federal funding and support has declined since 1981, essential near-term gas research was no longer funded by DOE. GRI responded to this by cancelling or deferring some of its own projects with a longer-term payback and concentrating its limited resources on projects with a more immediate return to the industry and ratepayers. This resulted in a radical change in the direction and makeup of GRI's program. While near-term research accounted for under 40% of GRI's R&D budget in 1981, it accounted for 80% of the 1985 budget.



RECOMMENDED DOE FY 1986 LONG-TERM GAS-RELATED RESEARCH PROGRAM

Discussed below are several important long-term areas of gas research that have been supported previously by this Committee, and require continued federal funding.

	FY 1984 Appropriation	FY 1985 Appropriation	GRI FY 1986 Recommendation
Biomass (gas-related)	$13.0M	$17.0M	$18.0M

Low-cost, nonpolluting, and renewable gas supplies from biomass could be made economically available in the future with the application of engineering and agricultural sciences to the development of methane-from-biomass systems. In particular, the cost of methane from biomass could be reduced, and the biomass resource base could be expanded by the development of highly efficient systems.

The unique advantages of biomass make it an excellent candidate for many regions of the U.S. that lack conventional energy resources. GRI began a program with the University of Florida's Institute of Food and Agricultural Sciences in 1982. GRI has other related programs in the Northeast with the New York Gas Group and the New York State Energy Research and Development

Authority and in the Southwest with Texas A&M University. All of these are cofunded efforts. We anticipate that many of the results are transferrable to other parts of the country. DOE should expand the regional biomass concept by providing $4 million in the FY 1986 budget.

In terms of DOE-supported research, it should be centered on biotechnological advances that permit the manipulation of both the feedstock and the microorganisms used in the bioconversion process. Thus, using technically proven methods of cloning for infusion of genetic material into living cells, for the ability to fix nitrogen, and for a specific conversion process, one can simultaneously adapt the biological organisms of the conversion process to produce a more efficient system. With improved biomass feedstocks through bioengineering and other techniques, a cost-competitive energy system should begin to emerge.

The gas industry recommends that $12.5 million (including $4.0 million for regional programs) be used for biomass conversion; $1.5 million, for waste conversion technology; and $4 million, for biomass growth and harvesting.

	FY 1984 Appropriation	FY 1985 Appropriation	GRI FY 1986 Recommendation
Liquified Gas Spill Facility	$2.25M	$2.20M	$4.00M

The liquefied gaseous fuels spill test facility program has significantly increased the available knowledge of liquefied gaseous fuels hazard phenomena through the successful execution of small and medium-scale liquefied natural gas spill tests. These tests led to the development of necessary models, established a basis of background technical information and provided the information required to conduct release prevention and control assessments. FY 1986 activities should include site selection and construction of a large scale spill test facility. It is anticipated that once the facility is operating it will be suppported by user fees.

GEOSCIENCES RESEARCH IN THE DOE BASIC RESEARCH PROGRAM--$35 Million

GRI is recommending a commitment of $35 million within the $1.74 billion budget for programs in DOE's Office of Energy Research for geosciences research. Three of the most important areas requiring a long-term geosciences/geophysics basic research program are: (1) geopressured gas resources, (2) methane hydrates, and (3) deep source gas. The potential of these long-term gas resources are so huge that if successfully developed, they could provide abundant supplies of natural gas for the next 100 years. However, there is so little actual knowledge or understanding of the geochemistry and geophysics of the resources that a major federal effort is required. The DOE basic research programs do not contain funding for generic research in these areas; therefore, a budget redirection is recommended to provide up to $35 million in FY 1986.

	GRI FY 1986 Recommendation
Geopressured Resources	$16.0M

Geopressured zone methane is one of the major long range options that could have large potential impacts on the supply of natural gas after the year 2000. These geopressured zones are located along the U.S. Gulf Coast and are sedimentary deposits containing trapped water and gas at higher than normal (hydrostatic) pressure. The water trapped by both faulting and shale barriers in these formations is believed to contain significant quantities of dissolved methane. The sedimentary deposits are up to 50,000 feet thick, and the geopressured zones are contained in these formations beginning from 5,000 to 15,000 feet below the surface. Estimates of the gas in place and ultimately recoverable gas vary widely. Experts have estimated gas in place to be as low as 860 Tcf and as high as 100,000 Tcf. Recent estimates of ultimately recoverable gas through advanced production techniques developed by research vary from 50 Tcf to 1,200 Tcf.

The quantities of gas are extremely large and this potential requires an aggressive research program. The research must include a combination of laboratory and field activities. The field activities should be funded at $10 million and should emphasize:

- o obtaining cores of both the sandstone and adjacent shales for laboratory analysis;
- o analyses of samples of produced phases with emphasis on understanding their sources and changes in composition;
- o accurate real-time recording of production rates for all four phases (gas, oil or condensate, brine, and solids); and
- o utilization of offset pressure monitoring wells and periodic transients in production rate to provide rigorous tests of ongoing computer simulation.

The parallel laboratory research program should be funded at $6 million in FY 1986 and use samples from the field research project to concentrate on topics which require controlled laboratory conditions for measuring values that cannot be deduced from field activities. Examples include:

- o PVT studies to define phase changes during production;
- o solids analyses to distinguish between formation material and precipatates, including evaluation of scale inhibitors;
- o research on brine treatment to minimize cost of environmentally acceptable disposal;
- o core analyses on sandstone and shale for quantitative definition of reservoir drive mechanisms; and
- o development of accurate computer simulations to predict relative permeabilities, capillary pressures, reservoir drive, fluid properties, and sandstone geometry.

A successful research program combining field and laboratory activities has the potential to optimize the recovery of gas from geopressured reservoirs with reasonable cost to gas consumers.

	GRI FY 1986 Recommendation
Methane Hydrates	$3.0M

Methane hydrates are cages of ice with molecules of natural gas trapped inside. They were first found occurring naturally in 1964 by a Soviet drilling crew exploring in Siberia. In 1981, the drilling vessel "Glomar Challenger" operating off the cost of Guatemala for NSF discovered methane hydrate deposits in the sub-seafloor. Hydrates have also been discovered beneath the permafrost regions of Alaska's North Slope. Even potentially more important, seismic reflections from widely separated regions of the world's oceans indicate a "frozen zone" exists in many of the seafloor sediments, possibly containing methane hydrates.

Perhaps most important is that gas hydrates, which are solid, have the potential to act as barriers to normal fluid movements through the host sediments and may even form seals trapping free gas where the structural and stratigraphy of the rocks themselves would not. Finding this "cap" or seal may lead exploration toward likely areas for natural gas exploration. Because such large areas of sedimentary basins are underlain by permafrost or are covered by water, the volume of gas locked in hydrate reservoirs may be enormous. For example, based on Soviet calculations of hydrated reserves in Siberia, the shallow reservoirs under the permafrost of North America could contain 200 Tcf of such gas. The muds under the deep water along the continental margins of North America have been estimated to contain up to 20,000 Tcf, of which, perhaps, 200 Tcf are in the rocks porous enough to be produced.

To better define this resource and estimate its potential, research is required on sonic techniques and instrumentation necessary to identify hydrates through characteristic sound patterns. Research is also needed on better techniques to

determine the electrical resistivity patterns (salty hydrate formations are better electrical conductors than the surrounding unfrozen salt water) to help identify and locate the hydrates. New extraction technologies are required to melt the hydrates or separate the gas from the ice formations. This research requires $3 million in the FY 1986 DOE budget.

	GRI FY 1986 Recommendation
Deep Source Gas	$4.0M

Several theories exist concerning the occurrence of deep sources of natural gas. Two major sources hypothesized by scientists are abiogenic and subducted.

Abiogenic gas derives its name from speculation that it was formed by non-organic means; that is, it did not come from the decaying of organic matter. Instead it was formed deep in the earth's mantle during the creation of the earth, and through the ages it slowly seeped to shallower depths.

Subducted gas is thought to be of organic origin, but instead of being formed from layers of compacted sediments, the gas is created when marine organisms and vegetation are pushed deep into the earth by the tectonic movement of the earth's crust. The subducted gas theory would indicate possible locations of rich traps of natural gas some 20,000 to 30,000 feet underground.

These theories remain controversial and a great deal of very basic scientific research remains to be done to resolve the origin of deep source gas. More importantly, understanding the migration routes of this gas could lead to complete new exploration techniques. It could also add several hundred Tcf of natural gas resources.

Research is needed in new geochemical and geophysical exploration techniques and technologies, ranging from improved real-time diagnostics to control of deep and very deep directional drilling. Radical innovations such as the use of remotely operated "moles" are required. Technology to detect deep gas using methods such as carbon and helium isotopes is needed. Also, better modeling modes of entrapment for deep gases that consider trap types, depth, and reservoir quantification are needed.

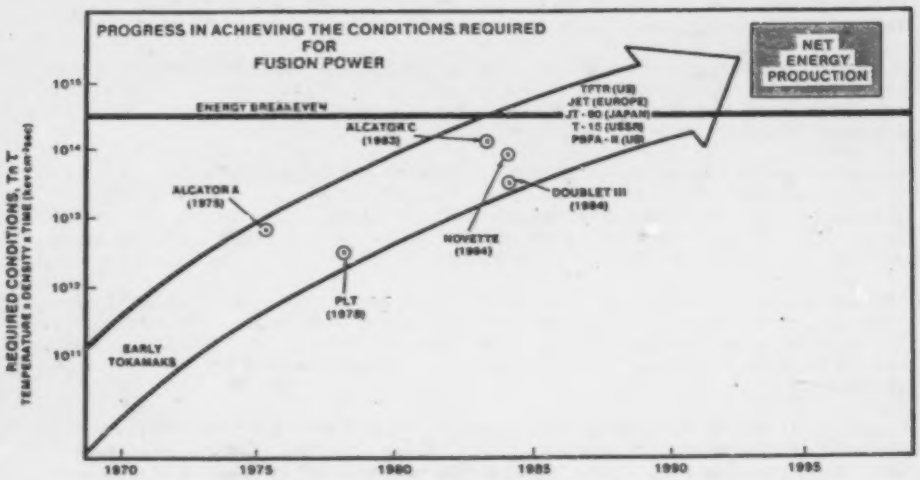
Funding of $4 million in FY 1986 is required to initiate these research activities.

SUMMARY

A consistent federal energy policy that provides adequate funding for long-term gas research is needed in order to insure affordable domestic natural gas supplies in the future. The gas industry recommends a DOE FY 1986 budget for gas-related research under this Subcommittee's jurisdiction of $54 million consisting of a $35 million redirection in the DOE Office of Energy Research programs, $18 million for gas-related biomass research and $4 million for the liquified gaseous fuels spill test facility.

STATEMENT OF FUSION POWER ASSOCIATES

Progress in achieving the combined conditions required for producing fusion power (high temperature, high density and adequate time duration) is continuing at an impressive rate, as shown in the figure below. Also, in February, the Tokamak Fusion Test Reactor (TFTR) reached one of its design objectives: the production of plasma at 100 million degrees. This is an impressive accomplishment and gives us confidence that TFTR can reach its goal of reaching energy breakeven conditions.



Unfortunately, while scientific progress has continued, there has been a weakening of government resolve to demonstrate the production of fusion power for practical purposes. Cuts in the program in FY 1985 and additional cuts proposed for FY 1986 would reduce program resources by about $80 million and have caused the Department of Energy to severely reduce the effort on our most ambitious projects: TFTR and MFTF-B. Many of us in the program believe that this will effectively transfer leadership of the world fusion effort to Europe and Japan. Opportunities for the participation of U.S. industry in fusion are significantly reduced.

In the face of policy restraints and budgetary reality, the DOE Office of Fusion Energy has devised a strategy that is reasonable under the circumstances. This strategy emphasizes pursuit in the near-term of several innovative ideas that are relatively inexpensive to test, strenthening of international collaboration and postponement of large hardware procurements. In describing the implementation of this strategy, however, I believe that the Office has underfunded efforts on systems analyses, long range planning and conceptual reactor

design. A larger effort is needed to guide the research program and to assure the Congress and taxpayers that the fusion program is aimed at developing an attractive practical product.

I also urge you not to ignore the plight of the inertial confinement fusion program, which is included under DOE's weapons budget. The DOE has proposed to cut that program in half and to make it an "invisible" part of the weapons budget. I would consider it a national tragedy if DOE were allowed to decimate the inertial fusion program in this way.

The Board of Directors of Fusion Power Associates has approved a Policy Statement on fusion energy development which is attached.

BOARD OF DIRECTORS

POLICY STATEMENT
1985

The Board of Directors of Fusion Power Associates, on behalf of the association, urges that fusion power development be based upon the following:

RECOMMENDED POLICIES

- Research and development toward an economically–competitive fusion power system should receive high national and international priority.
- Engineering sciences, technology development, systems analyses and plasma sciences should all be considered essential elements in a balanced fusion effort.
- Timely commitments to necessary new and improved experimental facilities are needed to ensure continued program momentum and progress into the 1990's.

The above recommended policies are based upon the following:

FINDINGS AND RECOMMENDATIONS

- Fusion research, world-wide, continues to make outstanding progress.
- Concept improvements are emerging at a rapid rate, giving increasing confidence that an economically–competitive fusion power plant can be developed. Innovative ideas that reduce costs or accelerate knowledge should be expeditiously pursued in all aspects of the fusion program.
- It would be premature, at this stage, to judge which of the variety of magnetic and inertial fusion concepts will ultimately succeed commercially. This fact should not discourage use of the best available concepts in the design and construction of needed fusion test facilities.
- The fusion programs in the U.S., U.S.S.R., Europe and Japan have comparable accomplishments, facilities and momentum. The present rate of progress in the world program is based on capital investment commitments made in the 1970's. Progress will predictably diminish unless next step facilities are developed in a timely manner.
- International cooperative agreements have been a substantial factor in fusion progress and should be encouraged. Such agreements, however, are not an effective substitute for focused national efforts, needed national experimental facilities and subsequent engineering test devices.
- Governments should encourage and promote the full participation of industry in the planning, research and development as well as in engineering and operating aspects of fusion programs. If industry participates in the government – funded R & D programs now, industry will be better prepared to assess the commercial potential of fusion power in the future.

- Governments should foster innovation and optimize utilization of resources by encouraging and strengthening interrelationships among industry, laboratories and universities.
- Fusion-related programs in universities should be selectively strengthened and encouraged to ensure an adequate supply of engineers and physicists with knowledge in this field.
- The governments of the world have made a sustained investment in fusion research. The time has come to begin to capitalize on this investment by placing increased emphasis during the next decade on the engineering and systems design aspects of practical fusion energy systems.

STATEMENT OF WILLIAM KERR, DIRECTOR, OFFICE OF ENERGY RESEARCH, UNIVERSITY OF MICHIGAN

Mr. Chairman, Distinguished Members of the Committee:

I am William Kerr, director of the Office of Energy Research at the University of Michigan. I appreciate the opportunity to make recommendations to your committee. I ask for support of a program to increase research collaboration between research universities and the national laboratories of the Department of Energy.

I do not need to convince you of the importance of assuring that this nation maintain plentiful and economical sources of energy. Nor, I believe, do I have to argue that an important ingredient in our ability to discharge this responsibility depends, in the long term, on our capability to maintain a strong and effective research program to discover and develop the new sources of supply that will be required. One way of increasing the effectiveness of our nation's energy research is to encourage more cooperative research programs between universities and the DOE's national laboratories.

Universities can make an important contribution to energy research through innovative new ideas which can come from both faculty and students, and also because they are the only source of the new and highly trained engineers and scientists that will be needed to develop energy resources presently unavailable to the nation. I urge that the DOE move to develop more cooperative research with universities.

In 1981 the Energy Research Advisory Board of the Department of Energy was asked by the Assistant Secretary of the Department to undertake a study of the Department's multiprogram national laboratories. In the course of the study, carried out by a Multiprogram Laboratory Panel of the Board, the question of university participation in the various programs of the Department arose and was judged to be important enough that a University Programs Panel was set up in response to a request from the Assistant Secretary that the Board examine the interrelationship between the Department and the Nation's colleges and universities. The Board was also asked to evaluate the effectiveness of the Department's policies and programs with the academic community. A report prepared by the Panel concluded that improved relationships between the laboratories and the academic community were needed if the Department's research programs were to achieve a desirable level of excellence and productivity.

One way to improve this relationship is through more meaningful research collaboration between staff of the national laboratories and faculty and students of the universities. There has always been some research collaboration involving these two entities, with the most productive programs being those in High Energy Physics. In the High Energy Physics area the collaborative programs have been carried on by staff and graduate students located at both the laboratories and at the universities, with each group typically being involved in their normal research activities. In other areas, whatever collaboration takes place usually involves university staff or graduate students going to the laboratory to work in some existing program, typically during a summer session. In many cases this has been a one summer activity, with no continuation beyond that. The university staff members usually have been involved in little or no planning of the research programs in which they participate.

A principal reason that the High Energy Physics programs have produced more meaningful collaboration is that each group, at the laboratory and at the university, had some control over financial resources needed to carry out the research. I am convinced that if resources were available to enable university staff and graduate students to work with laboratory staff in developing cooperative research programs in other fields, collaborative work would be increased, and the resources of the universities, especially the intellectual resources of the university staff and graduate students, would be much better utilized. In addition, the training of future scientists and engineers, a responsibility to which the University Programs Panel gave considerable emphasis, would be significantly improved by providing an opportunity to students for participation in problems of long range national interest.

I have proposed a trial program to DOE which would involve the University of Michigan and a number of the DOE national laboratories which have research activities to which our staff could contribute. The program would require modest funding for a three year period during which we would work with the laboratories to develop proposals for cooperative research. I have discussed this proposal with several of the national laboratories and have gotten a positive response.

I have also discussed the proposal with Dr. Alan Trivelpiece, Director of the Office of Energy Research of DOE. Dr. Trivelpiece has made a number of helpful suggestions and has expressed a positive attitude toward the proposal. Unfortunately, funds to support such an effort appear not to be available at this time.

It was the consensus of the University Programs Panel that a method should be developed to provide greater participation of university faculty in both the planning of DOE's research programs and in the research itself. It is my belief that a program of the kind that we propose could serve as a model for

cooperation between national laboratories and universities. For a comparatively small investment we can achieve a significant contribution to the nation's energy research program. Of equal or perhaps greater importance, the graduate students who will carry on the research of the future can be initiated into and can begin contributing to this research several years earlier than would otherwise be possible.

If I can provide additional information on this subject, I shall be glad to do so.

Statement of Institute of Gas Technology

This testimony pertains to FY'86 Appropriations for the Department of Energy non-nuclear programs. Specific requests are:

- $2 million to develop a high-pressure biomass feed system for wood gasification, initiate studies on integrating fuel cells with the gasification system, and test product gas recycle in the RENUGAS PRU, and assess the biological constituents of a novel culture to enhance the yield of methane and other chemicals by direct digestion of unpretreated short rotation woody biomass crops.
- $1 million to develop improved testing procedures for the establishment of predictive correlations between laboratory measurements and actual geopressured/geothermal well production.
- $2 million to continue to develop composite thermal energy storage (TES) media system by obtaining data at the PRU level.
- $0.5 million to complete LNG storage tank safety model by obtaining data at an existing, instrumented LNG storage tank.

Mr. Chairman and Members of the Subcommittee:

My name is Bernard S. Lee. I am President of IGT, a not-for-profit energy R&D organization in Chicago.

The 99th Congress faces the difficult task in the coming year of making decisions which lead to cutting the Federal budget deficit. While undertaking this challenge, the Congress should recognize the need for high-quality technological development that will enable us to achieve a state of energy readiness and security.

Some people believe that an economic trend which will contribute to the nation's energy well-being is the "deindustrialization" of America, characterized by the growing importance of the service-producing sector at the expense of goods-producing industries. In this vision, the old energy-intensive basic "smokestack industries" will vanish as we become a nation of computer technology and information suppliers, leaving the smokestack industries to our import partners. It is tempting to attribute the decline in energy consumption of recent years to more or less irreversible structural changes in Western economies and to assume that future economic growth will be realized with ever-diminishing energy inputs. Against the background of the worldwide glut of conventional energy sources at declining prices, this line of reasoning dictates that little money and effort should be spent on the development of new energy sources or the technology to use energy more efficiently.

But already there are warning signs that the past few years have been only a reprieve from our energy problems, not a commutation of sentence. Oil and gas resources have not increased and demand has begun to rise. Estimates for 1984 indicate that for the first time since 1979, demand for petroleum products rose 3% over the previous year. Net petroleum imports, which had fallen for four years in a row, grew 9% last year.

Furthermore, OPEC's recent price reduction will almost certainly not be the last, which means that consumption will continue to rise. The Department of Energy's most recent forecast projects a 20% increase in U.S. petroleum consumption between 1983 and 1995. DOE also foresees an even sharper 70% jump in oil imports to an all-time high of nearly 9 million bbl/day by 1995 as domestic petroleum production continues its slow but inexorable decline. An interruption of supplies followed by soaring prices could find the U.S. and the West back where they were ten years ago. The practical value of the Strategic Petroleum Reserve is unknown, and the U.S. still has no concrete plan for how and when to use it.

In addition, the demise of the goods-producing sector has been greatly exaggerated. This sector, especially its durable goods component, has historically borne the brunt of economic downturns, and conversely, has grown rapidly during periods of expansion. In the two years following the recessionary trough of November 1982, for instance, real economic growth in the durable goods subsector was 8.3/year — more than double the 4.0% annual growth rate reported for the service sector.

DOE is now predicting that energy use in the industrial sector will grow faster than in any other sector as growth in output outstrips the energy efficiency gains made in the recent past. For example, the 4.2% growth in output projected for the commercial sector over the next five years will be exceeded in many energy intensive-industries, including chemicals where a 5.6% increase in output is forecast and basic metals, a 4.7% gain. Thus, we can conclude that many of the changes we have experienced in our economy and our energy use patterns over the past few years were more cyclic than structural.

Against this background of uncertainty and change, the U.S. does not have an ultimate plan to provide future energy supplies. Rather than debate whether we should regulate or deregulate the energy industries, we suggest a policy based on strong support of research and technology development. This policy should be broad enough to encompass many eventualities and leave plenty of room for changes of direction; in short, place the United States in a state of readiness. Restricting the government's role in funding R&D to cases of potential high risk and high payoff and to basic research severely limits the available options. Energy research is mainly applied research and should be supported through the entire chain of development from basic research to commercial applications, including the crucial process development and commercial demonstration steps.

American leadership in world technology has already begun to erode. Ten years ago, the U.S., with 5% of the world's population, generated about 70% of the world's new technology. Today, we only generate about 50%. Our comparative record with respect to energy research and development is even more dismal. In both 1979 and 1980, the U.S. led the other countries that belong to the International Energy Agency in the ratio of its government research, development and demonstration expenditures to Gross Domestic Product. By 1983, this ratio had slipped to 0.07% from 0.16% in 1979, and the U.S. was only ninth among the 19 IEA countries. In particular, our oil and gas R&D spending was only $38 million in 1983, much less than the $105 million in Canada and $89 million in Japan. New energy sources, including solar and biomass, dropped from 16% to 10% of our government energy R&D funding. Coal R&D spending plummeted from 19% in 1980 to around 9% in 1983. The share of nuclear R&D, by comparison, rose from 39% to 69% over the same period. Coal is our nation's largest energy resource. With demand for coal projected to rise and environmental concerns mounting, assigning such a low priority to develop and improve technologies for the cleaner utilization of coal seems totally illogical.

There is generally a mismatch between our future energy supply requirements and government-supported R&D. Private industry looks for short-term payoff in its investments; therefore, financial support by industry of energy research in the long-term public interest is not always feasible. And yet, our nation's future prosperity depends on the existence of technologies which will provide secure sources of energy. The necessary technology will not be available if government support is not forthcoming for energy R&D.

For FY'86, I fully support the gas industry recommendations of $200 million for gas-related R&D. The following are specific R&D programs in which IGT is actively engaged, and Attachment 1 describes these in more detail.

Thank you for the opportunity to present my views. I will be happy to answer your questions.

ATTACHMENT 1

Selected Energy Research Recommendations FY'86
Program Fact Sheet

BIOMASS

High-Pressure Thermochemical Gasification

IGT has shown that its RENUGAS process can gasify woody biomass to produce a high quality fuel gas useful for SNG production, direct combustion, or combined cycle power generation such as feed to a fuel cell. The IGT RENUGAS PRU would be ideal for testing the operation of fuel cells with gas generated from various forms of biomass. The woody biomass currently enters the high-pressure gasifier through a lockhopper system which requires a separate pressurizing gas that decreases the potential efficiency of the system. A feeder that could eliminate the need for lockhopper pressurizing gases, such as an extrusion/plug feeder, would significantly increase system efficiency. Such a feeder also promises to increase the types and sizes of biomass fed to the gasifier. Another means of increasing system efficiency is to replace steam as the principal gasification agent for the biomass. This can be accomplished by recycling process-derived gas, such as carbon dioxide, to replace some or all of the process steam currently used for gasification. This could greatly reduce or eliminate the need for a high-pressure process boiler and reduce overall system costs.

- IGT recommends $1.5 million to develop a high-pressure biomass feed system, initiate studies on integrating fuel cells with the gasification system, and test product gas recycle in the RENUGAS PRU.

Biogasification or Wood

Short rotation woody biomass represents a potentially large, renewable feedstock for bioconversion to substitute natural gas. Until now, it has been necessary to chemically pretreat wood before microorganisms could convert it into methane. IGT has developed a mixed culture of bacteria that directly convert many of the wood components to methane and other chemicals without pretreatment. Laboratory studies to identify the organisms and the fundamentals of the metabolism are needed to define those factors leading to increased yields and decreased reactor size, thus ultimately improving process economics.

- IGT recommends $0.5 million to assess the biological constituents of a novel bacterial culture to enhance the yield of methane and other chemicals by direct digestion of unpretreated short rotation woody biomass crops.

GEOPRESSURED RESOURCES

The economics of gas production from hydropressured and geopressured reservoirs that produce large quantities of brine are not favorable unless the hydrocarbons exceed their solubility at reservoir temperature and pressure.

The technique of measuring very small changes in hydrocarbon content with continued brine production can be used to predict subsequent gas production. However, instrumentation currently being used at the well head cannot accurately measure these changes or whether the hydrocarbons exeed they solubility. Existing methods of measuring hydrocarbon solubility both at the well head and in the lab must be upgraded if this technique is to be successfully developed. New instrumentation is needed at the well head to digitally record all raw data and new sampling devices are needed to accurately deduce bottomhole pressure and saturation levels. Also, new laboratory apparatus and test methods are needed to establish accurate data on hydrocarbon solubility at typical bottomhole conditions.

- IGT recommends $1 million to develop improved laboratory test procedures and field instrumentation capabilities on existing test wells to provide the reference data base necessary to establish reliable predictive correlations between laboratory measurements and actual well production..

THERMAL AND MECHANICAL ENERGY STORAGE

Direct Contact Composite Media TES System

There are many cyclic high-temperature industrial processes, such as kilns for ceramics or bricks, which discard heat during the cooling part of the cycle and, therefore, waste considerable high-temperature energy. If this energy could be stored at high temperature and used in the heating part of the next cycle, as much as 45% of the energy used in a typical kiln could be saved. Current high-temperature Thermal Energy Storage (TES) is accomplished by heating a ceramic brick during "charging" and cooling the brick to recover the heat during "discharging." Because of the low energy storage capacity of ceramic brick, this results in large, heavy heat storage systems. Increased energy storage capacity can be achieved using phase-change materials which would be alternately melted and frozen in the desired temperature range. The energy would be stored during melting and be released when the material solidifies. In all previous system designs, this has proven impractical because of the great resistance to heat flow through the solid material.

IGT has developed a composite media in which a salt with the desired melting temperature is contained within a porous ceramic. Because of the method used to fabricate this media, the composite TES system stores large amounts of heat while avoiding the heat transfer problems associated with the formation of solid salt. The composite media is designed so that the molten salt remains within the porous ceramic throughout the temperature cycle. When compared to ceramic bricks, the composite TES system results in 36% less weight, 58% less volume, and 37% less cost, at an increase of more than 25% in efficiency.

- IGT recommends $2 million to construct a PDU, conduct tests of the composite media thermal energy storage (TES) system, and use this PDU test data to initiate design of a cost-shared, proof-of-concept facility to be located at an industrial plant.

LNG SAFETY

Improved Safety Model for Liquefied Natural Gas (LNG) Storage Tanks

Natural gas is often transported and stored in very large cryogencic tanks. The dynamic interactions between the stored liquid, changing atmospheric conditions and operator control actions require further definition under a wide variety of actual operating conditions. Such data are necessary to model these interactions so that the effects of operator intervention can be reliably predicted over the entire range of operating situations met in practice. This work will produce guidelines for LNG storage tank operations and equipment specification that limit or prevent uncontrolled pressure changes and hydraulic instabilities in the LNG (rollover). The primary benefit of these guidelines is improved safety in oprations by reducing the liklihood of venting of spilling of LNG. The Liquefied Gaseous Spill Test Facility can be used to gather data and develop models describing the dispersion of vapor

resulting from such spills. However, additional data and models are needed to improve the design and operation of large cryogenic tanks with the goal of minimizing the possibility of such spills.

The necessary data can be obtained from the operation of an existing instrumented LNG tank. The work involves data gathering, model development, model utilization, and guidelines testing. Verification of the model can be achieved by using the existing instrumentation at other LNG storage sites, such as the Liquefied Gaseous Spill Test Facility.

- IGT recommends $0.5 million for completion of the LNG storage tank safety model by obtaining data at an existing, instrumented, LNG storage tank.

Statement of American Gas Association

The American Gas Association (A.G.A.), whose members consist of nearly 300 natural gas distribution and transmission companies serving more than 160 million consumers in all 50 States, is pleased to present this statement in support of gas-related research and development (R&D) conducted or sponsored by the Department of Energy (DOE). A.G.A. recommends an appropriation of $200 million for all DOE natural gas-related R&D in FY 1986. Out of this total, A.G.A. recommends an appropriation of $38 million for projects coming under the jurisdiction of this Subcommittee. A.G.A.'s specific recommendations may be summarized as follows:

(1) GEOPRESSURED METHANE: $16 Million.

(2) LIQUEFIED GASEOUS FUELS TEST FACILITY: $4 Million.

(3) BIOMASS: $18 Million.

This level of funding is critical to energy resource development and utilization in general and to natural gas resource development and utilization in particular.

NEED FOR REDIRECTION IN FEDERAL ENERGY RESEARCH PRIORITIES

The DOE was created in 1977 to coordinate national energy policy.[1] In the enabling statute, Congress mandated that DOE was to "carry out the planning, coordination, support and management for a balanced and comprehensive energy research and development program," including programs for "optimal development of the various forms of energy production and conservation."[2] The DOE was also required to administer certain nuclear weapons research functions.[3] Consistent with its Congressional mandate, the DOE -- by FY

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[1] Department of Energy Organization Act, section 102, 42 U.S.C. section 7112 (1977).

[2] 42 U.S.C. section 7112 (5).

[3] 42 U.S.C. section 7112 (18).

1980 -- was spending approximately $3.4 billion on defense-related weapons research and $5.9 billion on energy research.

Since 1980, the DOE has shifted its focus away from energy research and toward defense-related research. Thus, for FY 1986, the DOE is requesting $7.3 billion for defense activities and only $2.1 billion for energy research. The DOE has become, in essence, an arm of the Department of Defense, funding less than 40 percent of the energy research that it funded in FY 1980, while more than doubling its defense-related funding. If the DOE is to be the true focal point for national energy policy, it must concentrate more of its efforts on conducting serious energy research. We therefore call upon Congress to move toward restoring energy research funding to the priority status originally envisioned in the DOE Organization Act.

Geosciences (e.g., geophysics and geochemistry) are the fields most likely to produce major improvements in this country's energy supplies over the next several decades. Geoscience can open the door to tremendous quantities of heretofore unattainable gas and oil resources. Unfortunately, the DOE has chosen to ignore this potential--a highly inappropriate posture for the organization created to be the centerpiece of national energy policy.

We strongly suggest that Congress redirect the DOE's research activities and budget to reflect more accurately the Department's objectives and our nation's needs. To this end, we recommend redirection of funds within the General Sciences and Basic Energy Sciences area. This redirection is intended to address the geosciences and resolve the research problems related to recovery of natural gas from deep sources, methane hydrates, and geopressured zones. It is also intended to address the materials research needs related to these technologies.

If the DOE were to address properly the geosciences, the recoverable resource base for natural gas would expand substantially. The Potential Gas Committee, the industry group that evaluates gas resources, has estimated that -- with foreseeable technology and economics -- the United States has approximately 984 Tcf or about 57 years (at today's consumption rates) of gas supplies from conventional sources. However, some experts contend that the total gas resource-in-place -- that is, the conventional gas resources plus much more extensive unconventional resources -- exceeds 100,000 Tcf. Although it is tempting to conceive of the nation's gas resources as a fixed and stable quantity, history has shown that technological achievements by the gas industry, like improvements in techniques for drilling for gas in deep, offshore waters, have resulted in significant increases in the recoverable gas resource base. The current estimate of about 57 years of gas supplies could be doubled or tripled if future technological achievements were to enable the recovery of just 1 or 2 percent of the estimated total gas resource-in-place. The DOE, as the focal point of national energy policy, must take the lead in the attempt to achieve future technological successes by assuring adequate funding for these technologies.

The DOE has also strayed from its statutory mandate to promote energy conservation research and, in doing so, has neglected research of new technologies designed to use natural gas and other fossil fuels more efficiently. Thus, in redirecting its research priorities, the DOE must also focus more attention on research into new technologies that promote the efficient use of fossil fuels.

There are several reasons why the DOE should concentrate more of its efforts on natural gas utilization technologies. First, natural gas is more attractive environmentally than other fossil fuels, because gas combustion products contain almost no sulfur or particulate matter. Second, because a large potential gas resource base is located in the United States, development of new gas utilization technologies would displace some of the crude oil imported from the tumultuous Middle East and reduce the nation's balance of trade deficit. Third, there are several new gas utilization technologies which offer greater fuel efficiencies and environmental benefits than are currently possible. In particular, there is tremendous potential for technological advancement in the area of electricity generation. Gas technologies, such as cogeneration, fuel cells, select use of gas and combined cycle gas turbines, offer the potential for electricity generation which uses less primary energy, and lowers capital costs, electricity prices and emissions. The development of new, more efficient gas utilization technologies would help the DOE return to its original mandate of promoting energy conservation research.

SPECIFIC FUNDING RECOMMENDATIONS

GEOPRESSURED METHANE: $16 Million

Geopressured methane is found in either a free state or dissolved in water and trapped in sedimentary rock at higher-than-normal pressures. One of the largest geopressured areas underlies a portion of the Texas and Louisiana Gulf Coast. Estimates of the total resource in-place range up to 100,000 Tcf; however, estimates of the amounts of gas that might ultimately be recovered range between 25 and 1,200 Tcf. Given the large in-place resource, geopressured methane could be a virtually inexhaustible source of domestic energy.

Research conducted by the DOE in the geopressured zones is focused on producing both gas, and electricity from low-grade heat in the reservoir brine. The DOE should redirect its research efforts and concentrate more on recovering the vast amount of dissolved methane found in geopressured zones. In addition to the DOE's current geopressured program, novel approaches, which utilize traditional engineering principles to maximize gas production and minimize brine production, must also be attempted. The gas industry is particularly interested in conducting tests on an onshore gas well located in a geopressured zone near the Texas coast. The well, which was donated to DOE by Superior Oil Company, has several characteristics which are ideal for determining the potential for geopressured gas production. In addition to an excellent location, the well is 22,000 feet deep and has

a large casing. The gas industry has indicated that it might be interested in conducting tests on this well, assuming that it could obtain cofunding from DOE. A.G.A. strongly recommends that, in addition to the geopressured research already being conducted by the DOE, Congress specifically direct the DOE to spend $4 million to fund this project. A.G.A. believes that this well offers a rare opportunity to conduct relatively inexpensive testing with gas extraction as its exclusive purpose. The success of such testing would determine whether the vast resource potential of geopressured gas can be exploited.

LIQUEFIED NATURAL GAS SAFETY: $4 Million

Liquefied natural gas (LNG) is natural gas which is liquefied by reducing its temperature to minus 260°F. The advantage of this technique is that it permits the transportation of large volumes of gas over great distances and terrain not otherwise suitable for pipelines. Potentially, the resource base for LNG includes any oversees gas reserves beyond those required for local consumption. However, one difficulty with transporting LNG has been that there is virtually no experimental data on the behavior of large spills.

A.G.A. strongly supports the construction of the DOE Liquefied Gaseous Fuels Spill Test Facility site for evaluating spills of various materials, including LNG. In FY 1985, DOE solicited comments from industry on the design of the facility; additional funding is necessary to complete construction and a thorough checkout of the facility. The test facility will allow researchers to evaluate spills of liquefied gases at magnitudes far greater than has been previously possible. The research that needs to be conducted includes investigating equipment vulnerability to natural forces, the ability of dikes to contain large spills, the advantages of in-ground storage and the behavior of spills on different surfaces.

BIOMASS: $18 Million

Since the supply of organic and waste materials is virtually unlimited, supplemental methane supplies from biomass and waste conversion can add significantly to the total future gas supply picture. Developing energy from biomass also would promote the environmental benefit of productive use of currently "useless" materials. However, the quality of the gas produced and a suitable processing technique are important concerns that inhibit the widespread use of these potential gas resources.

The sources of biomass, land and marine plant matter, must be tested to determine the appropriate technology for producing high-quality gas from the resource. Because these sources vary greatly in content, the technologies must be flexible. To produce gas economically, processing techniques must be improved to increase conversion efficiencies.

CONCLUSION

The natural gas industry recognizes that, to reduce the current budget deficit, federal spending for FY 1986 will be subject to careful Congressional scrutiny. Expenditures for natural gas-related research should not be exempt from such scrutiny. What the natural gas industry suggests for FY 1986, however, is a redirection of funds, rather than an increase, for gas-related R&D. If Congress responds to the gas industry's call for redirection, the nation could enjoy benefits of increased gas supplies and efficient gas utilization without increasing DOE's overall R&D budget or otherwise contributing to the federal deficit.

STATEMENT OF REV. T. BYRON COLLINS, SJ., SPECIAL ASSISTANT TO THE PRESIDENT OF GEORGETOWN UNIVERSITY

Mr. Chairman and Members of the Committee, I am Rev. T. Byron Collins, S.J., Special Assistant to the President of Georgetown University.

On October 4, 1984, Georgetown University in Washington, D.C. held the dedication of its new Intercultural Center, marking the first building in higher education to respond to the high cost of commercial energy by producing some of its own electricity with photovoltaic technology. Now, six months and a very cold winter after the installation, the "Photovoltaic Higher Education National Exemplar Facility" (PHENEF) is still exceeding the original power production specifications. The Center itself houses the School of Foreign Service, as well as numerous other university divisions, classrooms and offices, an exhibit area, and a 400-seat lecture hall. Georgetown expects the photovoltaic project to demonstrate that other large buildings could benefit from similar installations. A joint venture between the United States Department of Energy (DOE), the United States Congress, and Georgetown University, the Photovoltaic Facility was designed to demonstrate the feasibility of photovoltaic (PV) power as a future alternative energy source for campus building nationwide. This $24 million project was partially funded by an $10 million federal demonstration grant from the DOE and supplemented through Georgetown University resources including $4.5 million in special gift contributions to the G.U. Capital Campaign.

The solar power system for the already existing building was designed by Byrnes & Rowe Pacific, Los Angeles, California with Hughes Aircraft Company of Long Beach, California as the contractor responsible for engineering design and installation.

The Photovoltaic Array mounted on the roof occupies approximately 36,000 square feet of roof area, making it one of the largest collections of photovoltaic modules in the world. Accordingly, the roof of the previously constructed building was designed and built at a 35° slope oriented almost due south to maximize the conversion of the sun's energy during all seasons of the year.

Unlike the typical rooftop photovoltaic installation, Georgetown's is an integral part of the building's structure. The flat, rectangular modules fit tightly together, forming a watertight roof for part of the building. The modules, when in place, have a varigated

appearance and look like many roof surfaces; they can even be walked on. The Georgetown facility may be the only photovoltaic installation in the nation that can provide environmental protection as well as electricity, according to George Naff of Hughes Aircraft, the system installer.

The Array consists of 4,464 PV modules made up of thick semicrystalline silicon cells specially designed and manufactured by Solarex Corporation of Rockville, Maryland. Each module measures approximately 2 feet by 4 feet and has an average power output of 75.19 watts at 28° C and 16.2 V. The modules are sealed in a custom-designed 1600 Slope Glazed aluminum supporting grid made by Kawneer Company's Harrisonburg, Virginia plant and installed by Custom Walls & Windows, Inc. of Laurel, Maryland.

Ed Scheideman, Vice President of Sales for Custom Walls & Windows said, "Aside from being a custom design, additional on-site modifications of the Kawneer grid were required to meet previously unforeseen roof conditions. However, the team approach was primarily responsible for quick resolution of any problems and successful, timely completion of the project."

A high-quality, simple and reliable source of electric power, the photovoltaic process converts light photons from the sun into usable electricity. The system works as follows:

Light photons from the sun are absorbed by the watertight PV Array on the roof of the building. Once the light photons have been absorbed by the modules, the resulting direct current (DC) electricity is passed through the Collection and Electrical Subsystems. It is then converted into alternating current (AC) electricity by the Power Conversion Subsystem. A Control System distributes the AC electricity produced by the photovoltaic system into the Intercultural Center's electrical system. The Control System also activates the back-up energy system when additional electricity is needed to supplement the PV system's output.

Generally, this new system produces 30 - 50% of the electric power needed for the facility. However, during periods of low demand, such as week-ends and holidays, excess power may be produced which can be shared by other buildings on the campus that are tied into the University's system. The distribution of excess electricity is then handled by the campus-wide Control System. Most importantly, the building's system reduces the University's need to purchase electricity during peak periods. Georgetown pays rates based on time-of-use, and these rates are highest during mid-day periods of peak demand when the photovoltaic array's output is greatest.

Included in the system is an On-Site Data Acquisition Subsystem designed and manufactured by the Solar Energy Projects Department of Hughes Aircraft Company and Sandia National Laboratories that monitors the performance parameters of the system. It incorporates an Instrumentation Network that tells how much electricity is being generated and whether or not the back-up system should be activated plus an Electronic Weather Station that records the efficiency level of the panels under different weather conditions. In addition, unique circuits were integrated into the system for automatic "wake-up" at sunrise and "go dormant" at sunset.

Boeing Computer Services were contracted by Sandia National Laboratories and the Electrical Power Research Institute to monitor the system's performance. To date, everyone is pleased with the results. Of a 123-day period from October through the second week of February,

the system was activated and produced power on 109 days. According to Wilfred Vaudreuil, Director of Operations and Maintenance for Georgetown University, the 14 days that the system was not activated were due to weather-related reasons, such as snow covering the PV panels or overcast days and system maintenance checks. Brian Davis of Boeing Computer Services stated that, generally, if there is enough light to cast a shadow, there is enough light to activate the system.

Boeing's weekly and monthly statistical summary reports show the Power Conditioning Unit (PCU) output totalled 82,600 Kilowatt Hours for the 123-day period.

On behalf of our President, Rev. Timothy S. Healy, S.J., I would like to express our gratitude for the Committee's continued interest and support of this program.

Statement of Southeastern Universities Research Association

Summary

1. The Continuous Electron Beam Accelerator Facility (CEBAF), managed by the Southeastern Universities Research Association (SURA), received an appropriation of $3.5 million in operating expenses for Fiscal Year 1985.

2. An FY 1986 budget request of $5 million in operating expenses has been submitted by the Administration and is before the Energy and Water Subcommittee at this time.

3. Support for CEBAF as the "first priority major construction project for nuclear physics" has been reaffirmed in the September 1984 report of the Nuclear Science Advisory Committee (NSAC) Ad Hoc Subcommittee on a 4 GeV Electron Accelerator for Nuclear Physics and the November 1984 NSAC "Review of the 1983 Long Range Plan for Nuclear Science."

4. During 1984, SURA convened a national search committee for the Director of CEBAF which, in January 1985, recommended the name of an internationally known accelerator physicist as Director of CEBAF. Negotiations with the candidate are nearing completion.

5. FY1986 funding for CEBAF proposed by the Administration would "continue research and development and A/E activities" on CEBAF "to establish a technical base for this project so that construction could be initiated in FY1987."

6. SURA endorses the proposed $5 million CEBAF budget for FY1986. These funds will sustain the R&D momentum developed over the last year and allow further progress to be made on the A/E work.

It is a pleasure to submit this statement to the Subcommittee on behalf of the Southeastern Universities Research Association (SURA) and the Continuous Electron Beam Accelerator Facility (CEBAF).

This has been a year of major accomplishments for CEBAF. Over the last year, it has been possible to better define the project's scope, schedule, and total cost. I am pleased to report that the efforts of the last year have reconfirmed our previous construction cost estimate of $225 million presented last year.

Management was also strengthened. The $3.5 million in operating funds appropriated by the committee in FY1985 allowed CEBAF to begin building a technical and administrative staff. CEBAF has been particularly successful in attracting high-level, experienced personnel both from the U.S. and foreign research communities. Staff size has doubled to 40 in the last months, allowing rapid progress to be made on the machine's design.

And in cooperation with the Oak Ridge Operations Office, an architect/engineering firm having considerable experience with accelerator facilities has been retained to perform detailed design work.

Development of prototypes of critical accelerator components is also well underway. We were pleased to have 30 national and international firms respond to our recent request for proposals on the fabrication of prototype high-power klystrons and modulators. These state-of-the-art components will help the selected manufacturer move to the forefront of this industry, reflecting one of the less visible benefits arising from the construction of these large research machines.

At the national level, 1984 saw the Nuclear Science Advisory Committee (NSAC) reaffirm its commitment to the 4 GeV CW electron accelerator as its "first priority major construction project." Responding to the deferred construction funding for CEBAF, Dr. George Keyworth, Director of the Office of Science and Technology Policy, requested a review of the scientific justification for the accelerator. In response to that request, NSAC formed the Ad Hoc Subcommittee on a 4 GeV CW Electron Accelerator for Nuclear Physics. Chaired by Dr. Erich Vogt from the University of British Columbia, the subcommittee worked from July through September 1984.

Building on the pre-NSAC Friedlander Report (1976) and subsequent NSAC reports in 1977, 1979, 1982, and 1983, the Vogt Subcommittee concurred with the conclusions reached by previous subcommittees and endorsed the 4 GeV machine, an action subsequently adopted by NSAC.

In response to actions taken by this subcommittee in the Energy and Water Development Appropriation Bill for 1985, the Department of Energy and the National Science Foundation requested NSAC to review its 1983 Long Range Plan for Nuclear Science. Their November 1984 report, "Review of the 1983 Long Range Plan for Nuclear Science," reaffirmed the 1983 plan's findings and made this statement:

> As first priority for new major construction, NSAC endorsed in 1982, and again in 1983, a 4 GeV CW

> electron accelerator. The very recent Vogt report, endorsed and transmitted by NSAC, reviews the scientific questions that can be addressed and reaffirms the central role of such an accelerator and its status as the first priority for major new construction in nuclear physics.

Later in that review, again referring to the 4 GeV electron accelerator, the report states:

> We urge the DOE to continue to do its utmost towards a timely construction of CEBAF.

Two actions developed out of these reaffirmations of support for the NSAC Long Range Plan and CEBAF's role in that plan:

- the Administration included CEBAF in the FY1986 budget at a level of $5 million;
- a national search committee was appointed to recommend a candidate for the CEBAF director position.

In the case of the FY1986 budget proposal before the committee, those funds will sustain the research and development momentum developed over the last year and allow further progress on the architect and engineering work. Given the pre-construction stage of its funding, CEBAF is one of the most thoroughly studied accelerator design concepts yet produced. Should construction funds be approved in FY87 as suggested in this year's budget submission from DOE, work done in FY1986 will allow us to begin a well-defined construction project, both in terms of cost and technical design.

The Search Committee for a Director of CEBAF was chaired by former National Science Foundation director Dr. Edward Knapp. Committee members were Dr. Allan Bromley (Yale), Dr. John Schiffer (Argonne), Dr. Leon Lederman (Fermi), Dr. Tom Sugihara (Oregon State University), Dr. Ernest Henley (University of Washington), and Dr. George Wheeler (University of Tennessee). In January, the Search Committee recommended the name of an internationally known accelerator physicist to the SURA Board of Trustees for consideration. I am happy to report that we are now in the closing weeks of negotiations with the Search Committee's proposed candidate, and I am confident that he will start work at CEBAF on May 1, bringing a core group of senior scientists with him.

We are tremendously encouraged by these accomplishments over the last year. The continued support of the science community and the Administration, coupled with the success in recruiting staff and progress on the overall design, made this last year a most productive one. As President of SURA, I am particularly pleased to report on the impact CEBAF is having on university programs not only in the region, but throughout the nation.

Preliminary results from a recent survey we performed suggest that the SURA member institutions are adding considerable numbers of new physics faculty members in anticipation of CEBAF. Perhaps the most concrete example of these activities is the Virginia legislature's funding of an Institute of Nuclear and Particle Physics at the University of Virginia.

On the national level, we are seeing nuclear physics groups at several prestigious institutions, such as the California Institute of Technology, redirecting their research programs to prepare for work at CEBAF. These actions reflect the stimulating effect large research machines have on regional science as well as the nation as a whole. This is particularly true for the new generation of scientists. A renewed interest in nuclear physics is being shown by graduate students, revitalizing the field.

In closing, I would like to thank the committee, both for this opportunity to review the CEBAF project and for the committee's long-standing interest in the health of science in the U.S.

Statement of Biomass Energy Research Association

Since its founding in 1982, BERA has been priviledged to share our member's ideas and concerns with Congress and to speak in support of a continued federal commitment to the U.S Department of Energy biofuels energy research and development program. The biofuels program now consists of municipal solid wastes, alcohol fuels, and the biomass R & D programs.

I would like to take a moment to re-emphasize some fundamental but key points that make biomass energy unique among the renewable energy technologies.

- First, biomass energy can readily provide liquid, gaseous and solid fuels as well as electricity, by application of suitable conversion processes.

- Biomass could contribute up to 10-17 Quads of energy to the Nation's primary energy supply with vigorous R & D support.

- Many biomass energy applications are economically viable without federal subsidies and tax programs. Examples are certain wood-fueled combustion systems for steam and process heat production, and landfill-methane recovery systems.

-Biomass does not require the development of storage technologies to become viable, as the energy is stored within the fuel in the same manner as traditional fuels like coal and oil.

We appreciate the difficult challenge facing Congress and the Administration as efforts are made to strike a balance between a prudent national energy development policy and fiscal restraint. The option of funding every technology program is no longer financially viable. Each must be scrutinized in terms of potential contribution to the national energy security and its cost-effectiveness at achieving this goal.

It is our conviction that biomass technologies are important national energy resources which pass the litmus test for federal investment. In a time of difficult fiscal decisions, we believe money invested in biomass energy is well spent. Furthermore, the biomass industry is disaggregated and market segmented and has neither the money nor personnel to conduct

the needed basic R & D activities. Therefore, the federal government's leadership is essential now to ensure that biofuels technologies and the infrastructure necessary to utilize these technologies are available when needed.

The BERA budget proposals that I am submitting today are a product of a wide solicitation of ideas from our members, a review of the Fiscal Year 1985 DOE Biomass Energy Technology program accomplishments, and consideration of those programs we believe will deliver the best output per federal dollar invested.

The proposed BERA budget reflects three major themes and concerns that we have about the FY 1986 Department of Energy Biofuels Energy Program.

First, in FY 1985 two previously separate programs - municipal solid waste and alcohol fuels - were fully integrated into the biomass program. We support the full integration of bioconversion technologies into the biofuels program. However, this integration was done without an appreciable increase in total program dollar support of the biomass budget. Thus, the FY 1985 program operated with a net decrease in program funding for all activities. Our FY 1986 proposed budget rectifies this by recommending that additional monies be given to the most cost-effective biofuels activities.

Secondly, BERA continues to believe in the near term potential of medium-Btu gasification. As we have stated in previous years, we believe that medium-Btu gasification has excellent near-term potential. We appreciate the support that Congress gave last year in initiating a program for the scale-up of promising candidate processes that produce medium-Btu gas from a variety of feedstocks. Therefore, BERA requests an additional $5.0 million be specifically appropriated to provide for a continuing government contribution to this cost-shared, scale-up program. It is essential that this cost-shared scale-up work be funded and performed as a separate activity from the basic thermochemical R & D program to preclude the possibility of premature termination of important research projects due to a shortage of funds. We further recommend that the first process selected for scale-up be chosen by competitive procurement, and that other promising technologies be chosen for scale-up in a continuing program.

BERA also believes that there is a need to promote new and innovative research in the biofuels program. We encourage the biofuels program managers to continue to be responsive to new ideas and approaches to meet their program goals. Many of the technologies being funded have reached a stage of maturity that make them ready for scale-up work. It is important to continue funding these existing activities. However, we propose that a part of each program element be devoted to the search for new and fundamental research ideas. In this way, the biomass program will infuse the technology pipeline with fresh and potentially high-payoff activities. Examples are research to develop plant hybrids which directly produce fuels, advanced fermentation technology, and new catalytic processes for biomass conversion.

Mr. Chairman attached to my testimony are detailed budget recommendations. I would be pleased to answer any questions you have now, or later in writing and I greatly appreciate this opportunity to speak before you today.

FY 1986 BIOMASS ENERGY TECHNOLOGY PROGRAM PROPOSED BUDGET

A. BIOMASS FEEDSTOCK PRODUCTION RESEARCH ($8,300,000)
In the area of production, much of the work being conducted can be characterized as innovative, particularly in the areas of genetics and biochemistry. We encourage the Program Managers of the three production programs to continue to be responsive to new and innovative ideas and approaches to meet their program goals, especially those that could result in significant improvements in yields or quality of feedstock.

1. Short Rotation Woody Crops.....$4,700,000
The Short Rotation Woody Crops program continues to yield promising data about the potential of growing woody crops on a short rotation schedule. Research is still needed to examine successive resprouting of trees, and the number of harvests possible before replanting is necessary. Basic research remains the key to a successful SRWC program. Genetics and tissue culture research resulting in the creation of superior genotypes with better growth characteristics such as yield, pest resistance, and water range and physiological research need continued support.

2. Aquatic Species.....$1,500,000
Aquatic species research should focus on screening for promising microalgae species and further improving their suitability for energy production by manipulating their genetics and physiology. Small-scale field experiments continue to be needed to provide data on growing sustained high yields of algae and on their behavior as operating parameters are varied.

3. Herbaceous Species.....$2,100,000
Before growing energy crops can become a viable economic option for farmers, research needs to be conducted to select and breed highly productive herbaceous crops with species being produced for various geographical regions of the U.S. This includes basic genetic and physiological research on plants from throughout the U.S. as well as small-scale field testing. Research should also continue on the use of oil seed crops for the production of liquid fuel substitutes.

B. BIOMASS CONVERSION TO FUELS ($16,700,000)
The biochemical and thermochemical programs should pursue innovative research ideas that can lead to new breakthroughs in methods for converting biomass resources to energy. For example, in the biochemical area, this fundamental research might include work in new genetic techniques to perfect the development of plant hybrids for use as liquid fuels and in thermochemical conversion, many basic research issues remain in the area of direct liquefaction and ultrafast pyrolysis of biomass.

1. Biochemical Conversion.....$7,300,000
Biochemical conversion processes have the potential for the efficient conversion of biomass into relatively high value

liquid fuels. The biochemical conversion program should address the utilization of all components of abundant lignocellulosic feedstocks. Furthermore, the program should examine bioconversion routes to other potential liquid fuels such as higher alcohols, other oxygenated liquid fuels and aromatic octane enhancers.

Many impediments remain to effectively utilizing lignocellulosic feedstocks (wood, crop residues) because of their resistance to bioconversion. Cost-effective pretreatments should be developed to increase their biodegradibility. Novel bioconversions such as immobilized enzymatic cellulose hydrolysis and the fermentation of pentoses to ethanol must be improved to afford more rapid fermentation rates, greater yields and fewer by-products. The emerging tools of genetic engineering offer many potential methods of effecting the improvements needed. Once the fundamental elements of a bioconversion process are identified, many steps still remain before a practical system can be realized. Bio-reactor designs appropriate for a given bioconversion must first be identified and optimized at the bench and then intermediate scales.

Process elements must be integrated into a complete system that addresses uncertainties associated with the matching of process components, the purification and/or handling of products and waste streams and the efficient management of energy. Cost goals should be developed to guide and assess ongoing research.

Anaerobic digestion of lignocellulosics to produce methane is also impeded by the resistant character of these feedstocks. Advance digestion methods, pre-and post- treatments, and genetic engineering should again prove valuable in developing organisms exhibiting enhanced digestion rates. Different reactor configurations may offer further improvements in throughput rates. Only through a dedicated long-term effort can our most abundant biomass resources be effectively exploited for transportation fuels.

2.Thermochemical Conversion.....$9,400,000
Research has expanded our knowledge of the gasification characteristics of lignins and highly-oxygenated cellulosics in biomass, and helped to solve the engineering problems encountered in developing improved reactor configurations and process designs. Much of the U.S. work is aimed at the development of fluid-bed processes because of their inherent advantages (e.g. at Battelle-Columbus Laboratories, IGT, University of Missouri- Rolla, Pacific Northwest Laboratory, Texas Tech University, Kansas State University, EEE Corp.), although other process configurations, such as steam gasification in a rotary kiln (Wright-Malta Corp) and in downdraft, fixed-bed gasifiers(SERI) also under development. Unlike fixed-bed gasifiers, fluid-bed gasifiers are capable of accepting a broad range of feedstocks including those high in moisture and ash content, and those that are highly variable in physical shape.

Statement of Council on Energy Resource Tribes

The Council of Energy Resource Tribes (CERT) thanks the Chairman and Committee members for this opportunity to share with you our views regarding the FY 1986 budget and programs of the Department of Energy. Table 1 contains a summary of our recommendations to this Committee. Please note that our proposal includes a recommendation to extend the DOE FY 1985 $500,000 commitment to CERT through fiscal year 1990 at the same level.

Table 1. SUMMARY OF THE COUNCIL OF ENERGY RESOURCE TRIBES FY 1986 RECOMMENDATIONS TO THE SENATE ENERGY AND WATER DEVELOPMENT SUBCOMMITTEE OF THE SENATE APPROPRIATIONS COMMITTEE

	Administration	CERT
Department of Energy Contribution to Support CERT Technical Assistance	$350,000	$500,000*

*CERT also recommends this commitment remain at $500,000 through FY 1990.

CERT, as members of this Committee know, traces its origins to the year 1975 when 22 Indian energy resource owning tribes signed an organizing charter. The following year CERT was incorporated in Washington, D. C., and began a close relationship with the federal Department of Energy (DOE) (then known as the Federal Energy Administration). At that time DOE provided financial assistance to CERT. Later under an interagency agreement, which included DOI, DOC, and HHS, the DOE began to play the added role of administrator of most federal funds directed toward tribal energy development.

During these years CERT's tribal membership almost doubled (membership now stands at 39 tribes). Currently these 39 tribes collectively own one-third of the strippable coal in the western United States; 7% of the nation's onshore oil and gas reserves; 40% of all privately owned uranium; and substantial quantities of shale oil, tar sand, and hydroelectric and geothermal resources. CERT's increased membership also allows for more rapid and efficient transmittal to energy owning tribes of the latest technical and management information bearing on energy resource management, development, and protection.

The FY1986 R & D program should continue to conduct research to improve gasifier designs, catalyst systems, and process conditions for both low-and medium-Btu gasification. The advanced processes that offer superior conversion efficiencies, selectivities, and yields should be emphasized in this work. In our testimony last year, BERA noted that recent efforts to commercialize low-Btu gasifiers have encountered several technological limitations. Recently, the DOE-sponsored workshop on low-Btu gasification, which included both the R & D community and industry, identified these limitations more clearly. This workshop addressed the state-of-the-art and research needs to stimulate commercial use. Research and development funding is necessary to fill the technology voids identified at the workshop.

C. MEDIUM-BTU GASIFICATION SCALE-UP ($5,000,000)
BERA continues to believe in the near-term potential of medium-Btu gasification. Therefore, BERA requests an additional $5.0 million be specifically appropriated to provide for a continuing government contribution to this cost-shared, scale-up program. It is essential that this work be performed as a separate activity from the basic thermochemical R & D program to preclude the possibility of premature termination of important research projects. We further recommend that the first process selected for scale-up be chosen by competitive procurement, and that other promising technologies be chosen for scale-up in a continuing program.

D. REGIONAL BIOMASS ENERGY ACTIVITIES ($4,000,000)
BERA recommends that funding for the regional program be maintained at the FY 1985 level for the existing regional programs (Northeast,Lake States, Southeast and Pacific Northwest).

CAPITAL EQUIPMENT	$ 600,000
TOTAL BERA FY 86 BUDGET RECOMMENDATIONS	$34,600,000

During the last several years CERT energy production levels fluctuated due to such factors as changing world market prices and lack of customer or pipe line access. According to the U. S. Department of Interior Minerals Management Services, in 1983 (the date of most recent official data) all Indian royalties totaled $156.1 million, which represented a 4.1% decline from 1982. Natural gas production led this trend with a 11.5% drop—from 133 to 118 billion cubic feet. Indian lease oil production rose 1.5%, but royalty revenue was down more than $2.2 million from 1982. Coal production was down slightly, but royalties were up by 2.8%. When compared with 1979 figures, however, coal, oil, and gas all experienced modest to substantial increases.[1] It is equally important to note that while CERT member tribes have undergone these production or royalty ups and downs Indian tribes and CERT staff have been working on production oriented projects which will position tribes to take advantage of future production opportunities. In 1984-85 alone seven CERT tribes have requested and received technical assistance which will result in substantial energy production increases over the next several years. For example, the Paragon Ranch project, if successful, will mean the construction on the Navajo Reservation of four coal fired 500 MW power plants using a substantial Indian construction force, coal produced at Navajo mines, and Navajo self-sufficiency in electricity based on a 150 MW commitment for the tribe (see project descriptions which are appended).

With these trends and developments as background, Indian tribes are concerned that we may have reached a critical juncture for technical assistance from DOE. The FY 1986 Administration funding recommendation for DOE support of CERT is $350,000. This is not only below the FY 1985 level of $500,000 but is almost 50% below the FY 1982 DOE contribution to the interagency joint funding level.

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[1] Mineral Revenues: "The 1983 Report on Receipts from Federal and Indian Leases. U. S. Department of the Interior, Minerals Management Service Royalty Management Program." U. S. Government Printing Office 1984, pp. 38 and supra.

Positive tribal attitudes toward energy development and production result from direct tribal involvement in a process wherein they can see that an energy development project: (a) can be environmentally responsible and compatible with established tribal values; (b) can contribute to the balanced long-term development of the tribal economy; (c) can provide a revenue basis for needed tribal government services; and (d) need not introduce activities destructive of the social and cultural fabric of the tribe. CERT's program of technical and management assistance is designed to inform and position tribes so they can successfully seek and respond to such involvement. Put most simply, CERT programs make possible positive energy development and management experiences for tribes.

The rising tribal needs for technical and energy management assistance seem to have run head on into the Department of Energy's decision to decrease financial support for CERT. If this conflict of trends is allowed to continue, nearly ten years of CERT progress could be lost, and some tribes may revert to earlier attitudes toward cooperative responsible energy resource development. CERT urges this Committee not to let such events happen.

We suggest that at a minimum this Committee restore the DOE commitment to the interagency agreement to the FY 1985 level of $500,000. This is a modest $150,000 restoration. We further suggest that this Committee assist tribal energy resource development efforts by mandating that the DOE commitment be sustained at the FY 1985 level for the next five years with allowance for inflation. CERT believes that such a policy move would provide a firm basis for future tribal energy resource development and would represent one of the most cost-effective investments in responsible energy production that the Congress and the DOE can identify. Five hundred thousand dollars annually over a five year period can reasonably be expected to trigger similar increases of tribal energy production, to say nothing of the associated increases in Indian employment and the new contribution to the supply of domestically produced energy.

This completes my testimony. Again, I thank you for your continuing support and kind attention.

SEVEN PRODUCTION-ORIENTED CERT PROJECTS
1984-1985

Project	Project No.	Description	Funding Source	Due Date
Paragon Ranch Project	060-1001-0	Under this grant assistance is being given to the Navajo Tribe regarding its negotiating position on the establishment of a Mw 2000 power plant on the Navajo reservation. The final contract will involve Public Service of New Mexico, the Navajo Tribe, General Electric, and Bechtel.	DOE	Continues in FY 1986
Flathead Reservation Review of Oil and Gas Leases	060-1012-0	Mobil Oil has proposed seismic activity on the reservation. CERT has reviewed the prospecting permit as well as the proposed joint venture agreement.	DOE	Grant continues thru FY 1986
Blackfeet Remote Sensing	060-1002-0	Funds were used to obtain and analyze federal satellite photographs of the reservation. On basis of this analysis specific field work is recommended to the Blackfeet in the final reports.	DOE	3/85
Spokane Uranium Marketing	060-1031-0	Funds are being used to support negotiations for new uranium sales. Negotiations have resulted in a transfer of tax benefits which will allow Western Nuclear to market the uranium at a much lower, and therefore, more competitive price.		4/85
Fort Belknap Oil and Gas Exploration Assistance	060-1034-0	CERT provided technical assistance in the drafting of a contract which was submitted by the tribe to Montana Power. Negotiations are underway as of 2/8/85.	DOE	Project ends at end of negotiations
Zia Oil and Gas Exploration	060-1014-0	CERT provided technical assistance in the review of two proposals which Zia received. CERT also helped define a new set of negotiations, which are the basis for published bid solicitations.	DOE	5/31/85
Fort Peck Prefeasibility Study of Wind Utilization Potential	060-1029-0	A first-step evaluation of the wind potential on the Fort Peck Reservation was initiated. Using best available information, the wind environment, the wind technology and energy use in the area, an evaluation of the value of wind energy will be computed.	DOE	3/30/85

STATEMENT OF ROBERT L. MCCRORY, DIRECTOR, LABORATORY FOR LASER ENERGETICS, UNIVERSITY OF ROCHESTER

SUMMARY

The University of Rochester's Laboratory for Laser Energetics (LLE) has completed its original five year agreement with the U.S. Department of Energy (DOE). Rochester was responsible for one of the most important breakthroughs in laser fusion, the development of high-efficiency wavelength tripling. The DOE has executed a new planned $23,468,000 three-year Cooperative Agreement with the University for the LLE (1) to continue research for the Defense Inertial Confinement Fusion program, using the frequency-converted OMEGA laser system, (2) to continue operation of the National Laser Users Facility (NLUF), and (3) to continue to educate students in the fields of fusion, engineering, optics, and physics. In order to continue a level-of-effort program (consistent with FY85), a total authorization (which includes $750,000 for outside users of the NLUF) of $8,514,000 is required.

INTRODUCTION

The Laboratory for Laser Energetics of the University of Rochester occupies a unique position in the U.S. Defense Inertial Fusion Program. Established in 1970 as a center for investigation of intense radiation with matter, the Laboratory has the four-fold mission (a) to conduct basic physics experiments and research in support of the national short-wavelength laser program as well as demonstrating the feasibility of direct-drive laser fusion, (b) to provide graduate and undergraduate training in electro-optics, high-power lasers, high-energy-density physics, plasma physics, and nuclear fusion technology, (c) to operate the National Laser Users Facility, and (d) to conduct research in advanced technology areas related to high-energy-density phenomena.

LLE continues as an inertial fusion facility with significant non-federal funding, too. From its inception through 30 September 1984, more than $52.7 million of industry, university, and state funds have leveraged the $64 million federal investment. In addition to its key role in the U.S. Defense Inertial Fusion Program in laser-matter interaction experiments that support of the national short-wavelength laser effort, LLE is part of the University of Rochester and educates students.

EDUCATION

From its beginning in 1970, LLE has made the education of students one of its most important missions. This LLE mission is unique among the Inertial Fusion Program participants. The students come from departments and colleges within the university. While the largest number of graduate students come from the Institute of Optics and the Department of Mechanical Engineering, students from the Departments of Physics, Chemistry, and Electrical Engineering have been and will continue to be educated at the laboratory.

More than 200 students have received graduate and undergraduate training at LLE. Through June 1984, 41 students received Ph.D. degrees while working at LLE; 22 graduate students are currently engaged in Ph.D. research at the laboratory. Current graduate student research ranges from studies in hydrodynamics and parametric instabilities in plasmas to fundamental studies in nonlinear optics.

Graduates of the UR/LLE program are making significant contributions in a number of national laboratories, in industry, and in the nation's major research universities.

The laboratory is actively recruiting new students for graduate and postgraduate study and research in areas important to the Defense Inertial Fusion Program and to advanced technology development in general. As a result of a nationwide recruiting effort, more than 1000 responses have been received from potential applicants to the graduate research programs at LLE. Under the recently consummated DOE/LLE three-year Cooperative Research Agreement, LLE plans to increase the number of graduate students supported.

THE UNIVERSITY OF ROCHESTER PROGRAM IN LASER FUSION

The University of Rochester has been involved in fusion research since the mid-1960's. It has pursued an expanded research program in conjunction with industry since 1972 at the Laboratory for Laser Energetics. The U.S. Defense Inertial Fusion Program supports laboratory experiments which will determine the critical physics and engineering issues necessary to determine the scientific feasibility of igniting small fusion fuel masses. Present experimental strategy calls for the use of laboratory drivers to acquire data which will help to unambiguously determine the marginal ignition boundaries for small fuel mass systems. These data are vital to the nation's nuclear weapons physics research, and are also necessary in developing the potential for inertial fusion to become an attractive energy source for the future.

In the early 1970's, the University funded the fusion research effort almost exclusively through its industrial sponsors. As the program evolved from a bench-scale effort to a laboratory scale, the University elected to meet a national goal of laser fusion feasibility research using the joint support of the Federal Government, industry, utilities, the State of New York, and the University of Rochester. Approximately $117 million have been invested in the program since 1972. Approximately 46% of the total has come from non-federal sources. In effect, at Rochester a new and different kind of "national laboratory" has been created.

The fiscal year ending September 1984 (FY84) marked a milestone in the history of the Laboratory for Laser Energetics. It was the fifth year of the initial five-year research contract with the U.S. Department of Energy.

In the five years represented by the DOE/LLE supporting research program, 15,341 shots were recorded by the 24-beam, 12-terawatt OMEGA and one-beam, 1-terawatt GDL laser systems. More than 6000 of these were on-target shots. This represents one of the most extensive data bases on 1054-nm and 351-nm laser interaction with matter.

The University of Rochester was first to demonstrate and patent the high-efficiency, frequency-tripling process. Dr. Schriever, Director of the U.S. Department of Energy Office of Inertial Fusion has stated:[1]

> "In the laser fusion area, the most important breakthrough has been the development of efficient wavelength conversion, now being implemented on NOVA and OMEGA."

The full OMEGA system is now fully frequency-converted to 351 nm. The OMEGA system, with its high repetition rate capability and reliability will enable accumulation of crucial data necessary to understand the physics scaling laws of inertial fusion using short-wavelength lasers in a symmetric ("direct-drive") illumination geometry. Understanding the physics scaling laws means we must verify predicted target performance as target size, laser energy, and wavelength are varied. Rochester's critical role in the National Program will minimize the technical risk associated with the Inertial Fusion Program as well as provide an alternative approach to laser fusion.

During the past year several major experimental campaigns were carried out on OMEGA. These campaigns investigated (a) illumination uniformity, (b) coronal physics, (c) energy transport and ablation, (d) high-Z plasma dynamics, (e) atomic physics and x-ray laser physics, and (f) fusion diagnostic development. A number of these experiments were carried out in collaboration with other inertial fusion laboratories.

The results of these experiments, reported in LLE's FY 1984 Annual Report,[2] give renewed promise for the successful demonstration of direct-drive laser fusion. Direct drive is an important research tool needed to advance inertial fusion research, and provides a wealth of high-energy-density physics data. Atomic physics, laboratory astrophysics, x-ray laser physics, and x-ray generation are a few of the areas that

have benefited from research devoted to understanding the basic physics of laser-matter interaction.

Work at LLE and elsewhere has shown that the illumination uniformity required for high-convergence implosions can be achieved with laser technology already developed. Short-wavelength, laser-matter-interaction experiments have confirmed the expectations of high absorption, low preheat, and high ablation pressure.

The short-term (1- to 3-year) objective of the LLE program is to demonstrate sufficient drive uniformity with the 24-beam OMEGA system at 351 nm to compress targets to densities in excess of 20 g/cm^3. The OMEGA system converted to full 24-beam, 351-nm operation has begun operations at the 2000-J level. It is expected that densities of the order of 10 g/cm^3 can be achieved on OMEGA by 1986 using gas-filled targets. Improvements in illumination uniformity and cryogenic targets are expected to produce higher densities, of the order of 20 g/cm^3 by mid-1987.

OPERATION OF THE NATIONAL LASER USERS FACILITY

A second unique characteristic of the Rochester program is the National Laser Users Facility (NLUF). Since 1979, 42 proposals have been approved for the facility. In addition to investigations in the general area of inertial fusion, approved experiments have also included investigations in plasma physics, x-ray laser development, XUV spectroscopy, and instrumentation development. Researchers from Brigham Young University, Los Alamos National Laboratory, the National Bureau of Standards, the Naval Research Laboratory, the Goddard Space Flight Center, Physics International, Inc., Polytechnic Institute of New York, University of California (Davis), University of California (Los Angeles), University of Connecticut, University of Illinois, University of Maryland, University of Pennsylvania, University of Texas, and Yale University have participated in NLUF experiments.

PROGRAM FUNDING AND MANAGEMENT

On October 1, 1985, the Department of Energy executed a new three-year Cooperative Agreement with the University of Rochester. The new agreement funds the Laboratory for Laser Energetics at a planned $23,468,000 over three years ($7,428,000 for FY85, $7,764,400 for FY86, and $8,275,600 for FY87). These agreement amounts do not include funds which are provided directly to the NLUF users. The dollar amounts were the result of a series of negotiations with the Department of Energy, the last of which occurred in July, 1984.

The negotiated Agreement with the Department of Energy establishes Rochester's program as a level-of-effort program (consistent with FY85) for FY86 and FY87. The agreement funds 63.6 man-years per year for each of the three years. The equipment funded in FY85 includes $704,000 for the blue conversion. For FY86, equipment purchases are anticipated for replacement parts necessary to operate the system ($695,000), and diagnostic equipment required for the experimental campaigns ($437,000).

In order to operate the newly converted system and conduct the experiments which will produce high densities and temperatures in laser-driven inertial fusion capsules, as well as to continue its mission to educate students and operate the NLUF, LLE requires total funding of $8,514,000 for FY86.

We expect that the laboratory will continue to play an important role in the Inertial Fusion Research Program, in the training of the nation's scientific leaders, and in the development of advanced technology.

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1) S. HRG. 98-1175, Hearings before the Subcommittee on Energy Research and Development of the Committee on Energy and Natural Resources, United States Senate (March 5, 12, 20, 22, April 5 and 24, 1984), p. 836.

2) University of Rochester, Laboratory for Laser Energetics Annual Report, DOE/DP/40124-67 (January, 1985).

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STATEMENT OF PUBLIC POWER COUNCIL

Mr. Chairman and Members of the Subcommittee, my name is Harold V. Beckemeier. I am Chairman of the Public Power Council in Vancouver, Washington. Our organization represents 116 municipal electric utilities, public utility districts, and rural electric cooperatives which are preference customers of the Bonneville Power Administration. I also am an elected Commissioner of the Grant County Public Utility District in the State of Washington.

On behalf of our member utilities, the Public Power Council vigorously opposes the proposals contained in the President's Budget for fiscal 1986 to revise the repayment system used by the BPA and the other power marketing administrations. These changes are unnecessary to ensure timely recovery of the federal investment in power, unjust as an effort to raise rates for the sake of raising rates, and inappropriate as a means of balancing the federal budget.

The BPA is back on track in meeting its repayment obligations. BPA has made valiant efforts in both 1984 and again this year to meet its obligations to return with interest the capital invested by the Federal government in the Federal Columbia River Power System. After a period of very severe rate increases between 1979 and 1983, BPA has adjusted well, repaid all arrears in interest in 1984, and this year will make a substantial, $225 million repayment of capital. We appreciate the concern which has been expressed by some Members of the Congress about BPA's having fallen behind in the past few years. We have shared that concern and have consistently supported BPA's efforts to fulfill its long-standing commitments. We believe that Administrator Peter Johnson has made good on his promises and should be supported in his efforts to continue to do so. We see no grounds for a drastic revision in the method of determining repayment obligations.

The past several years have been trying ones for BPA for several reasons. Twice there have been severe water shortages, in 1977 and 1981. Any hydro system would have fallen short in those years. Since 1979, BPA has had to absorb the costs of the three net-billed nuclear plants being constructed by the Washington Public Power Supply System. Higher interest rates and rapidly escalating costs of construction and of conservation have forced BPA to increase its rates by approximately 700 per cent in just 6 years time. Such a drastic change, far above the rate of inflation, has imposed a major electric rate shock upon the people and industries of the Pacific Northwest. The priority firm rate, the rate available to our member utilities as BPA's preferred customers, has risen from about 3 mills to 22 mills. This has created a substantial "elasticity" impact which has led many home owners to switch from electric to wood or gas heat, has forced some industries to curtail production or cease operations altogether; and has invited many residents to reduce their electric consumption by improving the insulation in their homes. As a result, BPA loads have failed to grow at the rates long experienced and anticipated. BPA revenues thus fell behind expectations after each rate increase.

BPA has now stabilized its rates. We anticipate an adjustment of not more than 3 per cent over the next two years--hopefully not more than inflation. This should discourage further fuel switching and should maintain BPA loads at predicted levels and thus BPA revenues at planned levels.

The Administration's proposal would re-introduce the rate shocks of the early 1980's but on an unprecedented scale. An additional fifty percent increase on top of a 700 per cent increase would drive rates 1000% above the late 1970's. BPA power is now overpriced for the market. We have a Federal surplus of 1200 average megawatts and our non-federal utilities have an additional surplus of 800 average megawatts. We are selling all we can to California over the limited intertie facilities available.

Thus the Administration's proposed changes would price Federal hydroelectric power right out of the market both in our region and in California. People would turn to much cheaper fossil fuels, gas, coal, and even oil, and waste our greatest renewable resource, hydro-electric power. We foresee massive fuel switching, major industrial curtailment, the loss of one-third of the nation's aluminum industry, and the loss of some 65,000 jobs in our region. We will face a major depression brought on by a totally unnecessary and unjustified revision of long-standing repayment obligations which we are committed to meet and are now meeting. We therefore feel that the Administration's proposal is unsound public policy.

We also believe that the proposal is unfair and unjust. The excuse offered by the Administration for raising rates so drastically is that the people of the Pacific Northwest have been subsidized for years in their electric energy costs and that they now can well afford to pay more for electricity. The proposal rests upon false assumptions, inaccurate information, and insufficient understanding of the region's circumstances.

Power rates to consumers in the Pacific Northwest are not unreasonably low, compared to those in other parts of the nation. The region has no large commercial deposits of coal, oil, and natural gas, as most other regions of our nation enjoy. We therefore have to import these fossil fuels and pay transportation costs on them. We don't enjoy cheap gas or cheap coal. Our basic energy resource is hydro. Because we have the best hydro sites in the nation, our hydro is intrinsically less expensive than hydro elsewhere. But this merely serves to offset other economic disadvantages which we face, such as greater distances to markets and the lack of fossil fuels for transportation and other needs. A comparison of costs among regions of the nation must take into account the total energy picture, not just electric power rates.

Many Northwest consumers face high power rates. Many of the all-requirements customers of BPA are small rural electric cooperatives and small municipals. They have high operating costs because of long lines and sparce population. Several of these utilities have retail rates of 5 and 6 cents per kilowatt hour, as high or higher than many other areas in the nation.

The assertion that we are subsidized is also untrue. From the beginning of the Federal multiple-purpose development of our region's water resources, we have agreed to repay the costs of developing hydroelectric power with interest. Only one other purpose of federal water projects--municipal and industrial water supplies--is equally fully self-liquidating. In his testimony in which he advances the subsidy argument, Budget Director David Stockman has invented an entirely new way of calculating the cost of money to the Federal Treasury -- a way the Congress has never approved as a means of determining that cost. We think this sort of arguing is both unfair and unworthy of a public servant.

The Administration also argues that the federal deficit for 1986 will be very large and that each program must make its contribution by absorbing cuts or by increasing revenues. We appreciate the deficit problem and are ready to support sound measures to reduce it. However, this proposal amounts to a special 50 per cent tax on the cost of wholesale electricity to be imposed primarily on a part of the citizens of one region which is dependent for half of its electricity upon federal hydro projects. We think it is totally unfair to try to balance the budget by imposing such a special tax upon the predominantly small, rural electric users of the Pacific Northwest.

For these reasons, Mr. Chairman, we ask you and the Members of your Committee to reject these unwise and unsound proposals by the Administration and to enact the 1986 appropriations bill for Energy and Water Development using the traditional methods for evaluating the merits of the power administrations' requests.

STATEMENT OF ORMAT SYSTEMS, INC.

The following testimony is submitted by ORMAT Systems, Inc. (ORMAT), a Nevada company, in support of FY 1986 appropriations for the Department of Energy Geothermal Energy Program. We would appreciate your inclusion of our remarks in the record.

On behalf of ORMAT, I want to thank you for the opportunity to advise the subcommittee with respect to one program within its jurisdiction which we believe deserves continued support and encouragement, and to report on our own participation in that program. We are speaking of the Geothermal Resources Development Fund. While we are advocating no specific FY 86 appropriation, we believe the subcommittee will be encouraged to know of ORMAT's participation in a project which will have substantial public benefit, thanks to the existence of the Fund, and the geothermal loan guarantee program.

ORMAT is the successor to Republic Geothermal, Inc. in the development of significant geothermal resources in the Imperial Valley of California. ORMAT has purchased the Republic interests in leaseholds and in developed wells in the East Mesa area, and is moving forward aggressively with what we believe is this Nation's best opportunity to commercially develop low temperature geothermal resources. The project is now called the ORMESA Project.

Future development of this prospect rests on a foundation of sound resource assessment, and the accomplishment of a 30 year power sale contract for the electricity to be generated. These milestones have been achieved in recent years through substantial private equity investment and the use of a $9.03 million federal loan guarantee to Republic in 1977.

Commercial power generation is the next logical step in the development of the East Mesa geothermal resource, and we believe ORMAT is the logical developer based on its experience, technology and commitment. To complete the project, at least through the first phase generation of 30 megawatts gross (20 MW net), ORMAT projects an additional investment of $54.6 million, including $13.65 of private equity, and a federally guaranteed loan of $40.95 million from normal commercial sources.

ORMAT's application for the federal loan guarantee was filed in the DOE Regional Office in Oakland on February 1, 1985, and is being reviewed now by the Department of Energy. Simultaneously, progress is being made in obtaining the private financing for the project. Our hope and anticipation is that all decisions and financing will be secured in order to permit equipment installation starting in late 1985, with actual start-up in mid-1986.

ORMAT is not insensitive, Mr. Chairman, to the many changes which have occurred, in both the public and private sectors, with respect to the development of alternative sources of energy. Nor are we unaware of the need for great care in assessing all federal support for energy development during a period of increased concern about federal deficits, and decreased concern, at least among some, about energy supplies and prices.

Still, it is our considered view that in all respects, from the basic rationale for better understanding and developing geothermal resources to the viability of this specific project, the ORMESA project is an investment well worth making, This is so both as a matter of sound private enterprise, and because of the future benefits of this project to the overall development of geothermal resources in the U.S.

Later in this testimony, I will set out in greater detail the strengths of ORMAT as the project sponsor; the unique and important "match" of ORMAT technology to this specific geothermal resource; and the basic economic considerations of the project. But at the outset, I want to emphasize to the committee, in the context of the business plan for ORMESA, why federal assistance, in the form of a loan guarantee, is essential to success.

From our perspective, there is a continuum of possible government financial assistance to alternative energy ventures, ranging from complete grants to no government aid at all. Loan guarantees, as envisioned in the geothermal program, at least, tread a relatively narrow zone in this continuum, and one we are convinced makes sense in this instance.

The ORMESA Project is, in our well considered view, an economically viable project. To be sure, this project represents one of the first large scale commercial applications of modular, factory-packaged geothermal power plants utilizing the kind of low temperature hydrothermal resources which occur in abundance throughout the United States. Still the project is, first and last, conceived as a commercial venture, pursued because we believe it to be economically viable.

In the absence of governmental assistance of any kind, projects of this type would still occur, but on a much smaller scale, much later by perhaps three to five years, and on an unpredictable basis depending on the alternatives available to venture capitalists.

For projects like ours, what is missing, in simple terms, is the sort of commercial history necessary to reassure the establishment banking community to provide conventional debt financing on a non-recourse project basis. The federal loan guarantee for which we are applying simply fills this need.

The availability of the guarantee in this case does not make an economically questionable project viable. The project is already commercially viable - what the guarantee does do is accelerate development, allow attainment of a commercial scale now, and put the entire venture on a financial basis which insures its success.

THE PROJECT SPONSOR AND THE INNOVATIVE TECHNOLOGY TO BE USED

The project Sponsor, Ormesa Geothermal, is a joint venture of ORMAT Geothermal, Inc. and ORMAT Engineering, Inc., two members of the ORMAT Group of Companies.

The OPMAT Group of Companies includes ORMAT Turbines Ltd., which is the acknowledged world leader in the development and manufacture of fabricated Modular Power Plants based on the

Organic Rankine Cycle Technology. These systems are somewhat similar to conventional steam power plants except that an organic fluid such as a freon or a hydrocarbon rather than water is used as the primary working field. This organic fluid is heated by the geothermal fluid to produce the vapor that rotates the turbo-generator. This technology is referred to as a "binary" system due to the use of two fluids.

Since 1965, ORMAT has delivered more than 3,000 Modular Power Systems that are based on this technology and use conventional and nonconventional fuels to reliably supply power at remote unattended locations with low maintenance requirements. Examples include the Trans-Alaska Pipeline, and the Pan-African Telecommunications Networks.

With specific relevance to the Ormesa Project, ORMAT's experience is substantial. ORMAT modular power plants have been installed and field-tested, and have generated electricity from low-temperature, liquid dominated geothermal resources in both Nevada and Oregon. Although these existing ORMAT geothermal projects are smaller than this Project, they have proven the economic and technical feasibility of utilizing the type of modular power plant proposed for the Ormesa Project.

The ORMAT Modular Power Plant to be constructed at East Mesa will produce 30 MW (gross) of power and will be composed of twenty-six ORMAT Energy Converter (OEC) Modules. Because the OEC Modules operate on a subcritical Organic Rankine Cycle, internal pressures within the power plant and stresses on the components are lowered. This allows greater equipment simplicity and better reliability. Additionally, an ORMAT proprietary cascading design will be used in the interconnection of the Modules to maximize the overall efficiency of the power plant. With this design, if one OEC Module of the power plant is shut down for maintenance, the remaining OEC Modules will utilize nearly the full geothermal fluid flow to operate at increased power levels. The result is that almost full capacity may be maintained even during such maintenance periods.

The Modules for the power plant will be fabricated in the factory; therefore, a shorter project implementation period is anticipated. The use of the factory integrated OEC Modules allows ORMESA to propose the execution of this project within a relatively short time frame and with a high degree of confidence.

The largest proven reserves of geothermal energy are composed of liquid dominated resources with fluids of low to oderate temperatures. Flashed-steam technology in current use requires high temperature geothermal fluids in order to operate efficiently, with such higher temperature resources generally found at great depths. The combination of higher temperature requirements and deeper wells usually results in costlier and more risky projects. Furthermore, such projects require extensive engineering and considerable on-site construction, and once designed cannot be easily modified to adjust to changes in the temperature or flow rate of the geothermal fluid.

ORMAT Modular Power Plants can operate efficiently with geothermal fluids having temperatures as low as 200 degrees Fahrenheit. With a technology that allows for operation at lower temperatures, many more geothermal resources can be commercially developed, and with the factory fabricated ORMAT Modules, extensive engineering and on-site construction is not required.

This project will allow ORMESA to develop the moderate temperature East Mesa resource, and the larger scale commercial use of the ORMAT technology will demonstrate an important new method for tapping our Nation's largest geothermal energy reserves.

ECONOMIC FEASIBILITY

The total project costs are estimated to be $54.6 million (excluding the existing $9.03 million guaranteed loan). This development budget, together with the revenue projections from the Project, are based on reasonable and conservative assumptions with adequate allowances for contingencies.

The project revenues anticipated from the sale of electricity to Southern California Edison ("SCE") will cover all operating costs and the debt service on both the existing $9.03 million guaranteed loan and the proposed $40.95 million loan. Under the SCE contract, the initial purchase price for the power generated by the Project is fixed, with an energy portion payment that will automatically increase each year for ten years. After ten years, the capacity payment from SCE remains on a fixed schedule while the energy payment varies with SCE's avoided cost for electricity.

The financial projections indicate that after the initial three years of operation, Project cash flow will always be equal to at least 1.2 times the debt service requirements. By 1990, the annual revenues of the Project are projected to be approximately $15 million.

CONCLUSION

Having supplied this brief outline of our project, we want to emphasize that we understand our obligation to essentially make our case at the Department of Energy. The review process of our Geothermal Loan Guarantee application is well underway, and proceeding favorably, in our view. We do, however, feel we have an obligation to inform this subcommittee regarding the merits of our proposal, and to encourage the Congress to continue strong support for geothermal energy development.

Thank you for considering our views.

Letter From T.C. Cheng, University of Southern California

March 25, 1985

Senate Appropriations Committee
Subcommittee on Energy and Water Development
Senator Mark O. Hatfield, Chairman
Room SD-142
Washington, D.C. 20510

Dear Senator Hatfield;

I read with dismay a recent article in the Energy Daily, dated December 24, 1984, reporting that the proposed budget for the Electric Energy Systems program within the Conservation and Renewable Energy Group in DOE was almost all but eliminated in FY 86. The Program's FY 85 budget is 20.7 million, and its request to OMB for FY 86 is 33.1 million. OMB cut back the request drastically to 8.9 million. While the President's efforts at reducing the federal deficit is laudable, I strongly feel that any reduction in spending ought to be divided equitable among all agencies, rather than being directed at a disfavored few.

I have been personally involved in Electric Energy research for a number of years and am keenly aware of the paramount importance of such re- of the current high technology developments and advanced defense concepts all depend substantially on the availability of stationary as well as mobile power sources. Furthermore, the reliability and survivability of the immense power distribution system during periods of national emergencies are questions of paramount importance. Efforts at addressing these issues as well as any resultant technical solutions can only be tackled at the national level by an agency such DOE.

The Electric Energy Systems program within DOE has, in my opinion, performed a commendable role in addressing and tackling these difficult issues. Their work has been even more remarkable in view of the shrinking financial resources available to them.

I would urge most strongly that your subcommittee restore the funding appropriations to the Electric Energy System program to the level that they requested.

Your consideration of this matter will be most appreciated.

Yours Sincerely,

T.C. Cheng

T.C. Cheng

LETTER FROM M. GRANGER MORGAN, DEPARTMENT OF ENGINEERING AND PUBLIC POLICY, CARNEGIE-MELLON UNIVERSITY

March 6, 1985

Senator Mark Hatfield
Chairman, Energy and Water Subcommittee
Senate Appropriations Committee
United States Senate
Washington, DC 20515

Dear Senator Hatfield:

In a recent conversation ~~with Ed Nolen of your staff~~, I learned that your schedule is already filled for testimony related to the proposed budget of the Electric Energy Systems Program of the Division of Electric Energy Systems of the US Department of Energy. Accordingly, I would like to submit the following written testimony for consideration in your committee's deliberations.

Importance of DOE Electric Energy Systems Program.

The Electric Energy Systems Program (henceforth called DOE/EESP) is a relatively small program that supports research on a number of leading edge problems related to technological and systems problems involved in the high voltage transmission of electric power. Included in this program is research on possible health effects from human exposure to the electric and magnetic fields associated with high voltage transmission facilities, research that is related to understanding the potential vulnerability of our nation's high voltage transmission system to electromagnetic pulse that could be generated by one or more very high altitude nuclear explosions, research on problems related to electrical insulating materials called dielectrics, research on problems related to the transmission of electric power by high voltage direct current, and work related to power systems information management. The total budget of this program was a comparatively modest $20.7 million during the current fiscal year. In the budget submitted to OMB by DOE for the coming fiscal year, it is my understanding that the proposed EESP budget was $33 million. The budget submitted to the Congress by the President has DOE/EESP budgeted for only $10 million.

While I believe that all of the research supported by DOE/EESP is of great national importance, and that its termination or curtailment would impose national costs that considerably outweigh the possible budget savings, I am most familiar with the research being supported on possible health effects from human exposure to the electric and magnetic fields associated with high voltage power

lines. In the paragraphs that follow, I will provide specific remarks on this program area.

Possible Health Effects from Transmission Line Fields.

Do the electric and magnetic fields associated with high voltage transmission lines, and with all electrical devices and systems, pose a possible threat to human health? The truthful answer is that we don't know. While serious adverse effects are probably unlikely, a variety of questions have been raised in the modern scientific literature that we can not be sure, and enough people are exposed to these field that prudence dictates that we should understand the situation better than we do today.

The DOE/EESP program supports the bulk of federal research on this question. In my judgment, the program DOE/EESP has developed over the past several years is a model of efficiency, sharp programmatic focus, and quality control.

Research on possible health effects from human exposure to powerline frequency fields is nationally important for two reasons:

- There may be important health consequences from this exposure in which case we must understand hazard so as to take appropriate protective action.

- Even if there actually are no significant human health consequences that can arise from such exposures, there are enough ambiguities in the present scientific literature on this subject that major controversies arise every time an electric utility tries to build a new high voltage transmission line. Because of such controversies, over the next few years costs ranging as high as billions of dollars may be incurred either through the delay or cancellation of needed high voltage transmission facilities or through the imposition of unneeded exposure controls on such facilities.

The best way to avoid unnecessary costs and/or to minimize the costs of any necessary exposure controls is to make the relatively modest research investment that is necessary to reduce our ambiguities about the science in this field. I strongly urge that DOE/EESP's budget be restored to a level in excess of $20 million.

Florida Provides Example of Value of DOE Research.

An excellent illustration of the value that the DOE/EESP research can have has been provided over the past several months by the deliberations of an expert scientific commission appointed by the Department of Environmental Resources of the State of Florida in cooperation with the electric utilities of that State. This commission was charged with the task of reviewing the available literature and laying out the options available to the State to respond to a mandate imposed by the State Legislature to consider the need for possible regulatory action. I served as a member of this commission and can report categorically that without the research

that has been supported by DOE/EESP our task would have been impossible. The scientific ambiguities that do remain made it impossible for us to provide a simple set of action recommendations to the State, but the knowledge already available allowed us to structure and bound the problem and to lay out some reasonable alternatives (1). If the DOE/EESP research is able to continue at a reasonable level, the decision problem faced by Florida and other states should become considerably simpler as time goes on.

Non-Federal Sources Not Sufficient.

Limited support for research on this problem is available from non-federal sources ...particularly from the Electric Power Research Institute (EPRI) and the State of New York. These sources alone are not sufficient for at least three reasons. First, the State support has been modest, was a unique one-shot thing, and is about to end, second, only the DOE can provide the kind of nation-wide coordination and quality control supervision that is needed, and third, despite its excellent reputation for scientific excellence and independence EPRI alone is probably economically and politically incapable of mounting the kind of comprehensive and balanced research program that is needed.

Personal Relation to Field.

In closing I should explain my own role in this field. I am an expert in quantitative risk analysis. Since about 1978 I have been engaged in risk analysis activities related to the power frequency fields problem. For your interest I attach a summary paper titled "Power-line fields and human health" (2) that I recently published in IEEE Spectrum. I think you will find it a concise summary of the current state of the subject. My work in this area is supported by DOE/EESP, EPRI, NSF and private sources. The views expressed in this letter reflect my best professional judgment. They are informed by my close association with DOE/EESP but are not significantly influenced by the modest research support that I receive from that source.

If I can provide anything else that the committee might find useful, please do not hesitate to contact me.

Yours,

Granger Morgan

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and Public Policy
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and Public Policy/Electrical
and Computer Engineering

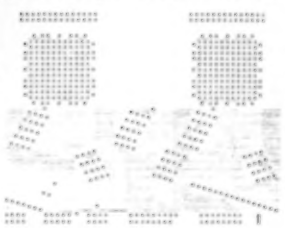
[From IEEE Spectrum, February 1985]

POWER-LINE FIELDS AND HUMAN HEALTH

CAN EXPOSURE TO 60-HZ FIELDS CAUSE BIOLOGICAL PROBLEMS IN HUMANS? THE ANSWER MAY BE FOUND THROUGH A PROCESS OF RISK ASSESSMENT

Models covered with conducting foil, such as this replica of a Hanford miniature swine at Battelle Pacific Northwest Laboratories, have been used by a number of investigators to study the surface fields and currents on the bodies of humans and animals exposed to 60-hertz electric fields. Behind these studies is a deceptively simple question: can exposure to extremely low-frequency electric and magnetic fields have significant health consequences? The answer to this question could have implications for activities ranging from the use of ordinary household appliances to the siting of 765-kilovolt transmission towers. However, no conclusive answer has been demonstrated, despite the volume of research.

In the article beginning on page 62, four experts in the field of risk assessment examine the research so far in terms of the problems in defining dose, the occurrences of "Cheshire cat" results, and the question: how safe is safe enough?



A section of the check plot for a printed-circuit board fabricated through the Information Sciences Institute of the University of Southern California in Los Angeles shows how the same facilities used to manufacture integrated circuits from data sent via computer network can be used to build prototypes of entire computer systems. The circuit board below, part of a design frame, holds two custom chips that were designed using a special interfacing method that allows concentration on function rather than input and output.

The board was designed and fabricated using a variation of the techniques used to make integrated-circuit masks, as reflected in the diagonal traces at the lower right. They are not true diagonals but a series of vertical and horizontal jogs, just as integrated circuits using the simplified style are confined to vertical and horizontal lines. More on page 44

Power-line fields and human health

Can exposure to 60-Hz fields cause biological problems in humans? The answer may be found through a process of risk assessment

Can human exposure to power-frequency electromagnetic fields have significant health consequences? Few people would have given this question a second thought 30 or 40 years ago, when electricity was considered the clean, safe marvel of the modern world. Today, however, the question of exposure to power-frequency fields is the subject of serious scientific study and heated public debate.

A significant body of high-quality research has been completed, first with the support of the U.S. Navy and subsequently with backing from the U.S. Department of Energy, the Electric Power Research Institute, the State of New York, and others. Despite this work, researchers do not know conclusively whether power-frequency (60-hertz) fields can significantly affect human health. Brief exposure to even fairly high fields is apparently not harmful. If there are adverse health consequences from chronic exposure, detecting them may prove very difficult. Nevertheless, decisions must be made; utilities must decide where to place transmission and distribution lines, and people must decide whether to sleep under electric blankets.

Since its discovery, electricity has been linked with health in a general way in the public mind, as reflected in the many advertisements for outlandish "electromagnetic" medical devices that appeared in the popular press around the turn of the century. [See "The message was electric," *Spectrum*, September 1984, pp. 84-95.] Along with this mental undercurrent, a shift has occurred in the last 20 years in attitudes toward technology, and there is a growing preoccupation with technologically induced risk.

Research in the area of electricity and health can be traced to a more specific origin. Beginning in the 1960s, researchers in the Soviet Union published several reports of nonspecific complaints—such as headache, fatigue, and reduced male sexual potency—among switchyard workers when line voltages were raised to levels of 400-500 kilovolts. These reports were widely, and quite appropriately, criticized in the West for incomplete reporting, inadequate experimental design, and misinterpretation of results. They did, however, prompt the initiation of research in the West.

In virtually every country today, people are exposed to power-frequency electric and magnetic fields from appliances and wiring in residences, workplaces and elsewhere. Other sources are low- and intermediate-voltage distribution circuits that deliver electricity to end users, as well as large, high-voltage transmission lines [see "Typical 60-Hz field strengths," p. 66].

There is very persuasive evidence that under some circumstances, power-frequency electric and magnetic fields can have biological effects. But there is no definite evidence of significant health consequences.

A biological effect is not necessarily a significant health consequence. In jogging half a mile, a variety of changes occur in the human body; pulse and respiration rates change, as do various hormone levels. These changes are biological effects. Such an effect may be of no consequence to overall health, or it may lead in some way to either beneficial or detrimental changes in health. For example, occasional jogging probably has no significant health consequence. Regular jogging may strengthen the cardiovascular system, improving one's health. In some circumcumstances, jogging can overtax the body and lead to a serious consequence such as a heart attack.

The human body is made up of highly adaptive systems that involve multiple processes of control. For this reason, an observable biological effect from exposure to a particular condition does not necessarily imply any health consequence; the body may simply adjust to the new condition.

Problems in estimating dose

The first question in trying to assess possible health risks from exposure to 60-Hz fields is what physical quantity to measure and how to collapse the time function of this quantity into a single number, or dose. Dose in the classical toxicological sense is directly related to biological effect. Doses from ionizing radiation, for instance, are measured in terms of the energy absorbed.

For exposure to extremely low-frequency (ELF) fields, however, researchers do not know what, if any, mechanism leads to significant health consequences. For this reason one cannot, a priori, choose an appropriate means of measuring dose. For example, should a researcher measure the unperturbed fields that exist in an environment when no human is present? The perturbed fields or surface charge on the body? Internal fields? Internal currents? Internal energy absorption? Can dose be measured by simple integration of one of these quantities over time? Should one integrate only exposures of a certain intensity? Perhaps only sudden changes in the level of field exposure are important. Amid all this uncertainty, one thing is clear: conclusions reached about the relative significance of exposure sources will depend strongly on how dose is defined.

Assuming for the moment that dose can be appropriately defined at various power frequencies, population exposures can then be determined either by direct measurement or by exposure modeling. Direct electric-field measurements have been used in several studies of specific populations. To study utility-workers' exposure to high voltage, both the Central Electricity Generating Board in the United Kingdom and the Bonneville Power Administration in the United States have developed electric-field-exposure monitors for workers to wear in a shirt pocket or on an arm band. Don Deno, an engineer at the General Electric Corp.'s ultrahigh-voltage research facility in Pittsfield, Mass., in collaboration with Mike Silva of Enertech Inc. of Pittsburgh, Pa., has designed and tested a vest for monitoring the averaged surface-charge density over the entire torso. The vest has been used in estimating the electric-field exposures of farmers who work on land that is traversed by high-voltage transmission lines. The implied exposure metric under which all of these devices operate is the time integral of the electric-charge density induced on some area of body surface.

When direct measurements of exposure are unavailable or impractical, exposure can be estimated by modeling, assuming that a means of measuring exposure can be identified. Such models consist of two elements: estimates of instantaneous exposure intensity as a function of position, and estimates of the length of time that people spend in such positions. Often exposure models use the unperturbed field as a measure of instantaneous exposure, for two reasons: (1) profiles of unperturbed fields are usually easy to compute or measure; and (2) for some common exposures, the unperturbed field is well correlated with other plausible measures of instantaneous exposure, such as internal current or surface-charge densities. Of course, precise relationships between external unperturbed fields and other quantities depend on factors such as the impedance between the body and other conductors, body shape and position, and field duration.

Several researchers have studied these relationships. Dr. Deno used a foil manikin to determine the induced currents across various body sections. Bill Kaune, a physicist at Battelle Pacific Northwest Laboratories in Richland, Wash., has conducted similar studies and has made detailed maps of internal current density in saline-filled human and animal models. Using the vest described above, Dr. Deno and Mr. Silva have measured the relationship between unperturbed electric-field strength and the charge collected on the torso when engaged in a variety of activities.

No one has yet reported measurements of body currents induced by magnetic fields, although theoretical estimates are available that are probably accurate within about a factor of two.

While the available data on human exposure are limited, they are sufficient to allow some order-of-magnitude comparisons between the exposures of humans to electric fields from power transmission lines, distribution lines, and household sources.

For example, if dose is defined as the time integral of the unperturbed electric-field strength, the average electric-field exposure from household sources exceeds that from power-distribution and -transmission lines. On the average, electric blankets are the largest single source. They are a major source even for people who live next to high-voltage lines, since residential buildings provide a high degree of shielding from outdoor electric fields. On the other hand, if dose is defined as the time integral of only unperturbed fields that are greater than some fairly high field strength, then transmission-line exposures drop slightly, while residential and distribution-line exposures drop to very low levels. Other definitions of dose that are equally plausible, given our present biological knowledge, result in other orderings of exposure sources.

Mechanisms of interaction

By what mechanisms can 60-Hz fields affect biological systems? Ionizing radiation affects tissue by breaking atomic or molecular bonds. Intense microwave radiation can affect tissue through heating. Extremely low-frequency fields in air do neither. A quantum of energy at ELF frequencies (about 10^{-13} electronvolts) would have to be 10 trillion times greater to break bonds. At 60 Hz, to induce joule heating that is comparable to the human body's 1-watt-per-kilogram metabolic rate, air electric fields of between 10^7 and 10^8 volts per meter or magnetic fields of between 10^2 and 10^4 gauss would be required. The strongest fields typically encountered by humans are several thousand volts per meter and several tens of gauss. Indeed, electric fields of more than about 10^6 V/m cannot be maintained in air without dielectric breakdown.

Nor can 60-Hz fields significantly perturb the very strong electric potential that exists across the outer walls of cells. The potential across a typical cell membrane that is 10^{-8} meters thick is about 100 millivolts, which means the voltage gradient across the membrane is roughly 10^7 V/m. This gradient cannot be significantly perturbed by the largest 60-Hz electric and magnetic field that the general public encounters.

But there are two mechanisms by which ELF fields apparently can interact with living systems to produce effects [Fig. 1]. The first is the stimulation of neural receptors at or near the surface of the skin, such as through the vibration of hair. The second mechanism involves some direct interaction between the field and individual cells, probably through a nonlinear transductive mechanism at the cell membrane.

Both direct and indirect evidence supports the existence of the first of these mechanisms. People and animals can sense the presence of 60-Hz electric fields of a few kilovolts per meter or more. In high fields, people report a tingling sensation on exposed skin. By dissecting individual neurons from the spinal columns of live cats, researchers have measured the response of a tactile neural sensor in an animal's paw as it is exposed to strong 60-Hz electric fields.

The evidence for interaction of fields with biological systems at the cellular level is also strong but somewhat more complicated. The outer membrane of cells is composed of a double layer of phospholipid and cholesterol molecules that make up a thin elastic film. In this lipid bilayer float a variety of large proteins that play a critical role in many cellular activities, including the transport of information and material across the membrane.

A number of theoretical models have been advanced to suggest ways in which ELF fields might interact with this complex biological system. While the theory remains tentative, a growing body of experimental findings suggest that some form of cellular-level interaction can take place.

Suzanne Bawin and Ross Adey, biological researchers at the J.L. Pettis Memorial Veterans Administration Hospital in Loma Linda, Calif., have observed that the rate at which calcium ions are released from neural tissue can be affected by exposure to ELF electric fields with strengths in air as low as a few tens of volts per meter. Calcium is important in many biological processes, including the transmission of nerve impulses. The effect is strongly dependent on both the frequency and field strength, suggesting some sort of resonant mechanism.

Carl Blackman, a biological researcher at the U.S. Environmental Protection Agency Laboratories at Research Triangle Park, N.C., has elaborated on these experiments and obtained similar results. His most recent findings suggest that a resonant interaction between the ELF magnetic field and the earth's magnetic field may be important.

Another set of experiments performed by Dr. Bawin and her colleagues showed that very strong ELF electric fields can significantly modify the waveforms of the nerve signals in a live slice of the hippocampal region of the brain of a rat.

A third type of experiment, conducted by Richard A. Luben and colleagues in the Division of Biomedical Sciences of the University of California at Riverside, shows that pulsed ELF magnetic fields can alter the way in which specific chemicals interact with cell membranes. Dr. Luben has shown that the interaction of the chemical choleratoxin with the bone cells of rats is affected by 60-Hz electric fields and that the effect occurs at the receptor sites on the cell-membrane surface.

While biological effects have thus been shown to exist [see "Biological effects of electromagnetic fields" by Eric J. Lerner, *Spectrum*, May 1984, pp. 57–69], there is uncertainty about the mechanisms of biological effects or their public-health implications, if any.

Artifacts and Cheshire cats

Not all of the experimental results reported in the literature are as clear-cut as those discussed here. Many "positive" findings prior to about 1975 are probably not valid but resulted from "artifacts" in the experimental system, such as shocks, vibration, ozone, or noise. Even some of today's carefully designed experiments can experience problems related to artifacts.

For example, in three series of experiments conducted at Battelle by B.W. Wilson and others in 1981–84, a clear effect of exposure to 60-kV/m electric fields was observed on the night-time level of pineal melatonin, a hormone. To establish an exposure-effect relationship, the Battelle team performed a series of additional experiments, which to their dismay did not replicate the earlier finding. After careful study, they concluded that the discrepancy was caused by an uncovered window that had allowed light to leak into the exposure room and by enzyme degradation that had occurred in the frozen samples of pineals during storage, before analysis. After these problems were corrected, researchers once again demonstrated the effect.

This now-you-see-it-now-you-don't phenomenon has been common in research on exposure to electric fields. Several years ago, H.B. Graves, a biology professor at Pennsylvania State University, labeled it the "Cheshire cat" phenomenon, after the cat who periodically appeared and disappeared during Alice's visit to Wonderland. The phenomenon can arise because effects, if they exist, are subtle or because important variables have not

yet been identified and controlled. It can arise also because, in any large series of experiments such as statistical studies with animals, a certain number of "false positives" are inevitable.

Most experiments are negative

Most of the animal screening experiments that have been conducted to seek effects in such areas as hormone levels, metabolism, blood chemistry, growth, and neurological function have been negative. A few positive findings show changes in the rate of bone healing and the level of excitability in certain neurons. Some cellular work may suggest immune-system effects, but this evidence must be weighed against a number of negative findings in experiments with animals and against the absence of definitive positive findings.

There are fairly strong findings of effects on animal behavior such as avoidance of electric fields; these findings are limited to field strengths at which the animal can probably perceive the presence of the field. When a strong field is turned on, animals typically undergo a transitory "Hey, what was that?" response. However, none of the long-term changes that occur when animals are exposed to known environmental stressors, such as audible noise, have been observed for ELF field exposures. Thus, despite considerable discussion in the literature, there is no persuasive evidence that exposure to ELF fields gives rise to nonspecific stress or to what Hans Selye of the University of Montreal has termed the "general adaptation syndrome." Several studies have suggested that under some circumstances electric-field exposure can produce modifications in an animal's circadian rhythm, or biological clock. The effect on the pineal melatonin hormone may be produced in this way.

Public-health consequences unclear

While there is no definitive evidence that such effects can lead to adverse health conseqeunces, several possible health impacts have been explored, including birth defects and cancer.

In a series of animal studies, Richard Phillips, Melvin Sikov, Lyle Sasser, and other biologists at Battelle have explored the possibility that exposure to 60-Hz electric fields might result in an increased rate of birth defects. An extensive series of studies using rats as subjects was completely negative. A three-generation study using miniature swine yielded mixed results. In the first litter of the first generation, no statistically significant difference in malformations was observed. In the second litter of the first generation and in the first litter of the second generation, a statistically significant higher incidence of malformations was observed in the exposed animals compared with the unexposed animals.

However, in the swine study, the number of animal subjects was small, the background rate of abnormalities was unusually high, and there was an outbreak of swine dysentery among the animals during the experiment.

The swine studies were followed by two studies of rats that used the same design. The first showed a marginal indication of positive findings, but the second was completely negative. A short experiment using guinea pigs was negative. In all cases, the birth defects observed in the exposed and unexposed populations were of the same varieties.

At the Centro de Ramón y Cajal in Madrid, neuroscientist José Delgado has reported a high rate of malformations in embryos from chicken eggs that had been exposed to fast-rise-time, low-frequency magnetic pulses. The effect was not seen with 60-Hz sinusoids. Among several attempts to replicate this work, a number are reported to be negative and one, in Sweden, is reported to be positive. None of the findings have yet been published. H.B. Graves has exposed large numbers of chicken eggs containing embryos to 60-Hz electric fields of varying strength, the strongest of which induced currents in the eggs that were greater than the induced currents in the swine fetuses. Dr. Graves reported no change in rates of malformations or behavioral characteristics of the hatched chicks.

In a small epidemiological study not yet published, Nancy Wertheimer, of the Department of Preventive Medicine and Biometrics of the University of Colorado Medical School, and Ed Leeper, a physicist, recently reported longer gestation times, higher abortion rates, and possibly more congenital effects in offspring of women who used electric blankets or heated water beds. However, there are serious questions about the statistical significance of these findings.

These studies exposed the adult female animal or the embryo—but not the adult male—to the electric field. However, Sven Nordström and colleagues at the University of Umea in Sweden reported a small increase in the rate of congenital malformations observed among the children of male workers employed by the Swedish State Power Board in high-voltage areas.

Does exposure to low-frequency electromagnetic fields result in birth defects? Based on current scientific evidence, this question cannot be answered. It appears unlikely, but not impossible, that there is a public-health problem. Given the many known risks from exposure to some drugs and chemicals that are not yet adequately controlled, it is difficult to see the justification for significant expenditure to limit exposures to low-frequency electromagnetic fields.

In situations where the evidence is insufficient to justify formal risk-abatement programs, some people may nevertheless choose to exercise prudence by taking a few steps to avoid exposure. During pregnancy, simple precautions such as avoiding electric blankets or heated waterbeds could be considered if there would be no significant costs. We would not, however, take any major steps such as moving away from power lines.

Unlike the investigations of birth defects, there have been no studies of animal subjects specifically designed to investigate whether there is a relationship between ELF exposure and cancer. In this case, what evidence there is comes from cellular-level research and retrospective epidemiological studies for humans.

Several investigators looking for chromosomal effects from field exposure have reported negative results. One exception is a Swedish study of occupational exposure, in which spark discharges may have been the contributing factor in the results.

A number of studies have reported an enhancement in the rate of RNA and DNA synthesis in cells exposed to ELF fields. An unpublished study by Wendell Winters, an immunologist, and others at the University of Texas reported that after fairly brief exposure to 60-Hz electric and magnetic fields, certain cultured strains of human tumor cells displayed permanent enhancements in growth rates. Enhancements in strains of nontumor cells have also been observed. There have been several criticisms of this work, but judgments about the validity and meaning of the reported findings must await formal publication.

The most publicized of the postmortem studies of the environments of human beings is a pair of "case-control" investigations by Dr. Wertheimer and Mr. Leeper, who reported a statistical association between increased incidence of certain cancers, such as childhood leukemia, and chronic exposure to low-level magnetic fields from low- and medium-voltage distribution lines. Their argument is not that field exposure causes cancer, but rather that it can act as a cancer promoter.

These retrospective epidemiological studies typically included visits to the addresses listed on the death certificates of cancer victims to determine magnetic-field exposure. Since no direct measure of exposure was available, a surrogate measure was obtained by visually classifying the current-carrying capacity of wires on nearby poles. There are some potentially serious problems with this measure. In addition, these Wertheimer–Leeper studies were essentially a comparison of houses rather than a comparison of people; the studies did not take into account individual characteristics that can influence cancer rates, such as smoking history and occupational exposures.

Other investigators have repeated the Wertheimer–Leeper experiments in Rhode Island, with negative results, and in Sweden, with marginally positive results. Several epidemiological studies are now in progress.

One series of recently published studies, based on proportional mortality rates, reported higher death rates from cancer in those whose occupations nominally involved electricity. Such studies must be interpreted with great care. High ratios may be due to low incidence of other causes of death, and the lack of information on the base population may result in misinterpretation. Some of the workers included in these studies, such as electricians who worked primarily on "cold" circuits, probably had low exposures to electric fields. Welders and aluminum-reduction workers who were studied were exposed to known chemical carcinogens, but these studies included no control for the effects of such exposures. Despite these qualifications, the same associations have been seen in different sets of data, indicating that further study is warranted.

Meanwhile, there is little persuasive evidence of an association between power-frequency magnetic fields and cancer. At the same time, however, there is little evidence that can be used to argue against such association.

What do people think?

The way in which people respond to a possible risk depends largely on their perception of that risk; the processes by which people perceive and make judgments about known and suspected hazards are complex. [See "Probing the question of technology-induced risk," *Spectrum*, November 1981, pp. 58–64.] In collaboration with three psychologists—Paul Slovic, Baruch Fischoff, and Don MacGregor, of Decision Research in Eugene, Ore.—we conducted a pilot risk-perception study of 60-Hz electromagnetic fields, using as subjects 116 alumni of Carnegie-Mellon University. Dr. Slovic and his colleagues have conducted a series of experiments in which subjects were asked to evaluate "hazards" using seven-point scales for risk attributes. The statistical technique of factor analysis was used, allowing hazards to be located in different parts of a risk-factor space. Other studies have demonstrated that the location of a hazard in

this space is strongly correlated with a subject's opinion about the degree of regulation needed for that hazard.

We repeated this study, including transmission lines and electric blankets (Fig. 2) as potential hazards. Our study suggested that demands for a stringent regulatory response would be more likely if transmission-line electromagnetic fields proved to be hazardous than if household and home-appliance fields proved hazardous. There are obvious parallels to other occasions of risk such as cigarette smoking versus air pollution, or mandatory seat-belt laws versus aircraft safety.

In our study, each subject was supplied with a packet of cards labeled with the names of known or potential hazards. The subjects were instructed to write a "10" on the card with the lowest risk and then to mark proportionally larger numbers on the other cards to indicate how much riskier they thought the other items were. The subjects viewed both power-transmission lines and electric blankets as being among the least risky objects.

Since the subjects of our study were a sample of Carnegie-Mellon University alumni, it may not be valid to generalize the results in terms of the U.S. population as a whole.

Limiting exposures: a complex task

If, on the basis of health-effects evidence, a decision is made to limit human exposure to 60-Hz fields, the first step is to define dose. If dose is measured as the time integral of all 60-Hz electric fields to which humans are exposed, attention would be focused on electric appliances and local wiring. If, on the other hand, only strong 60-Hz electric fields are significant contributors to dose, then exposures to transmission-line fields would warrant primary attention. Currently, science can't offer much guidance in choosing a definition of dose.

Almost everyone is exposed to electric appliances, wiring, and power-distribution lines, but only a few people live next to transmission lines. In the absence of clear scientific evidence, those few might argue that they are being asked to bear greater exposures than the rest of us. On the grounds of equity, arguments might be made for designing transmission facilities so that the electromagnetic fields to which they expose nearby people are "comparable" to the fields of other common sources.

If, as scientific understanding evolves, a decision is made to limit human exposures to 60-Hz fields, one method would be engineering strategies such as redesigning electric appliances, household wiring, and power lines. Other strategies such as public information, behavioral incentives, and changes in land use also deserve careful consideration. Until there is clear evidence of adverse health impacts from exposure, it will be difficult to justify reducing exposure in cost–benefit terms.

There is a great need for clear, honest, balanced public information about power-frequency electromagnetic fields. The nuclear-power industry got into trouble with an attitude of "trust us—we're the experts, we'll take care of everything," and the industry ridiculed or belittled those who voiced concern about safety issues. There is a substantial risk that such hubris could develop in the assessment of power-line fields.

Beyond the obvious need for research and risk analysis, improvement is needed in the way many states site and approve power-transmission facilities. State public utility commissions and environmental agencies should develop efficient, equitable strategies for dealing with possible field effects, based on a solid grasp of the science. State legislatures need to provide institutional arrangements for people to discuss real concerns. For example, in too many states, people who oppose a power line on the grounds of land use or esthetics are not allowed to make a formal objection based on these concerns. Formal opposition to a line must be based on health and safety arguments—until state legislatures change the ground rules.

The 'stopping rule' problem

In the next few years, scientific studies may definitely establish that human exposure to some or all power-line-frequency electromagnetic fields can have significant health consequences.

On the other hand, epidemiological studies and large-scale animal studies may continue to yield mixed but occasionally suggestive results. Because of the serious problems in experimental design, such studies may never be able to produce definitive or unambiguous results. More specifically focused studies of animal subjects and other laboratory research may continue to yield largely negative results except for an occasional positive study that proves difficult to replicate. Such studies could be the "false positives" that are to be expected in any large set of experiments—or perhaps the unknown is very subtle in nature.

If, in fact, there is no hazard from electromagnetic fields, how can we be sure of that? This is a fundamental and very serious problem for risk assessment. William Clark, formerly at Oak Ridge Associated Universities and now at the International Institute for Applied Systems Analysis in Laxenburg, Austria, has compared the modern process of risk assessment to the witch hunts conducted in Europe by the Inquisition during the Renaissance and Reformation*: "The Inquisition asked 'Are you a witch?' and proceeded to examine the evidence to see if you were. Today . . . we ask 'Is this a risk?' and proceed accordingly. In neither case is there any conceivable empirical observation which could logically force an answer 'No!' "

In the context of suspected chemical hazards, Dr. Clark argued: "What is not a risk with a parts-per-billion test can always be exposed to a parts-per-trillion examination. If rats cope with the heaviest dose of a chemical that can be soaked into their food or water, you can always gavage them. Or try mice or rabbits. Again, the only stopping rule is discovery of the sought-after effect, or exhaustion of the investigator (or his funds)."

Clearly, Dr. Clark has overdrawn his case to make a point. But the point is a very real one, to which the emerging field of risk assessment has not yet paid enough attention. Perhaps over the next few years, as risk assessment tries to come to grips with the question that opened this article, the specific subject of power-line-frequency fields will be the vehicle to make some progress on the more general problem of deciding when we know enough to stop worrying.

—*M.G.M., H.K.F., I.N., D.L.*

*William C. Clark, "Witches, Floods and Wonder Drugs: Historical perspectives on risk management," pp. 287-318, *Societal Risk Assessment: How safe is safe enough?*, Richard C. Schwing and Walter A. Albers Jr., eds., Plenum Publishing, 1980.

To probe further

The single most valuable collection of refereed research papers on possible biological effects and health consequences of electromagnetic fields can be found in *Bioelectromagnetics*, the quarterly journal of the Bioelectromagnetics Society. Good technical reviews are: W.R. Adey's "Tissue Interactions with Nonionizing Electromagnetic Fields," *Physiological Reviews*, vol. 61, 1981; A.R. Sheppard's "Biological Effects of High Voltage AC Transmission Lines," a report to the Montana Department of Natural Resources and Conservation, 1983; and "Biological Effects of 60-Hz Power Transmission Lines," report of the Florida Electric and Magnetic Fields Science Advisory Commission to the Florida Department of Environmental Regulation, 1985.

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STATEMENT OF ANTONINE LAFATA SOTTILE, WASHINGTON, DC.

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Washington, DC
March 21. 1985

Honorable Congress of The U.S.A.
SENATE Appropriations Committee
Energy and Water Development
Sub-Committee. Washington, DC
20510.

Honorable Chairman and Members of the Committee

I am Mr. Antonine Lafata Sottile Ph. Doctor of Engineering
By applying again to APPROPRIATE $. 25. Millions to my PROJECTS, in order to start 2. Initiatives of emergency importance and to achieve National Energy Independence, I wish to detail:

FIRST INITIATIVE: To build a Wagon EUREKA electric ********** vehicle prototype, my INVENTION. The characteristics of this CAR of future Centuries have been widely illustrated in my Statements before this CONGRESS, and detailed in my 70-page booklet, entitled:"Leanway = A Leaning Subway". In 1974. I presented this CODEX of modern Transportation to: Congress, Academy of Sciences, Academy of Engineering, National Research Council, National Science Foundation, National Society of Professional Engineers, Universities, Industries, 27. Metropolitan Areas in the U.S.A., etc.

Past year 1984 is recorded as the Centennial Anniversary of the Invention around year 1884, of the modern Automobile, with 4-stroke internal combustion engine on liquid fuel (OTTO cycle), after a series of experiments begun in 1769, by the French Engineer Cugnot, with his STEAM powered vehicle running at 2.5 mile/hour, regarded as the first Automobile in the World.

Year 1984 should be recorded as the Decennial anniversary of my Invention of Wagon EUREKA, and 1974 as the year when the Car has been reinvented

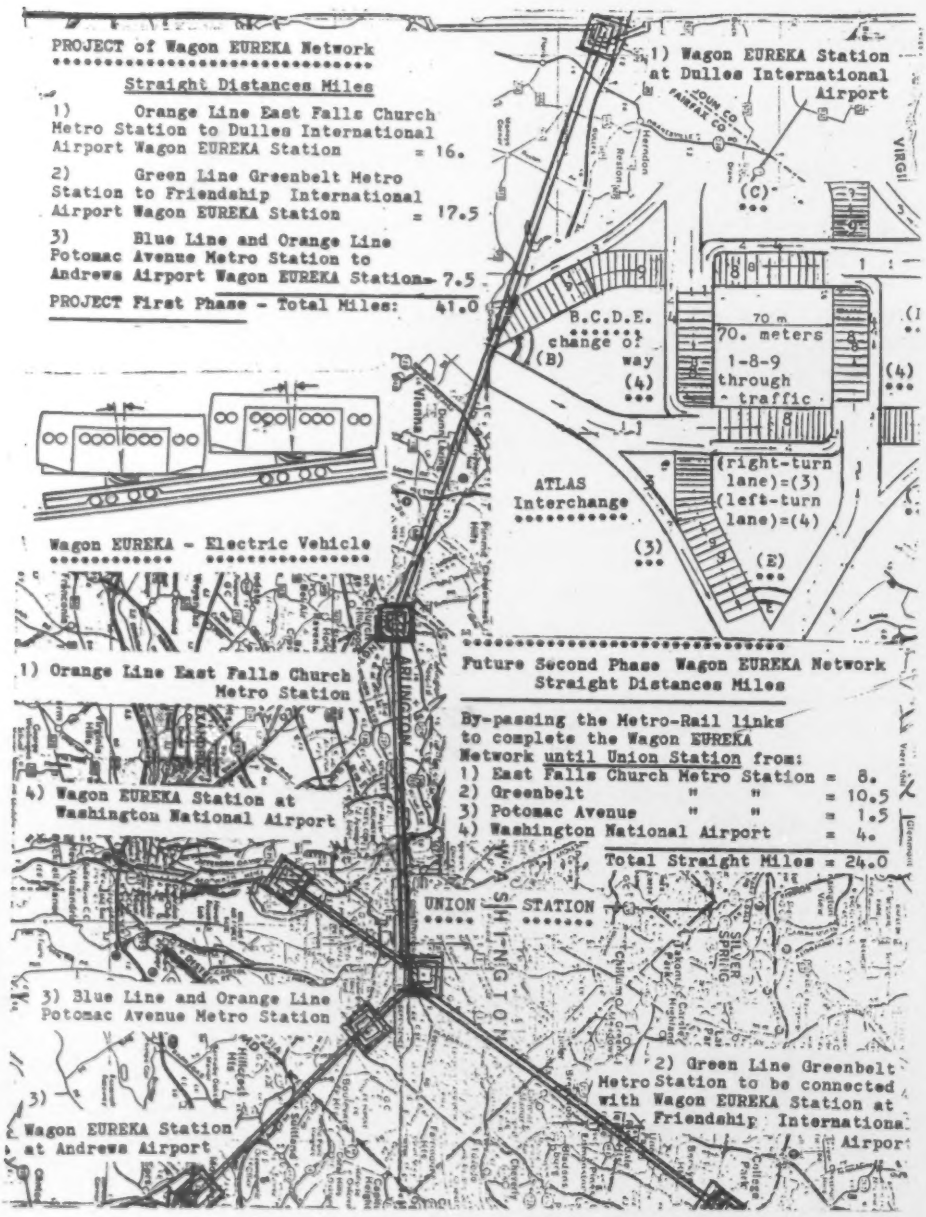
Expecting for the future universal diffusion of Wagon EUREKA, I wish to present a PROJECT on its urgent utilization in the Washington Area: To connect by Wagon EUREKA, Union Station with 4. important Airports around Washington.
1) Dulles International Airport -
2) Friendship International Airport -
3) Andrews Airport -
4) Washington National Airport -
This Project would be developed in 2. successive Phases: See joint Outline with straight-Distances

****

First immediate Phase: To link by Wagon EUREKA the listed Airports-1)- 2)- and 3)- to the Terminals of Metro-rail network utilizing temporarily the Metro-rail lines to reach the central Terminal of Union Station.
The terminals in consideration are:
1) Orange line East Falls Church Metro Station for Dulles Airport
2) Green line Greenbelt Metro Station for Friendship Airport
3) Blue and Orange lines Potomac Avenue Metro Station for Andrews Airport

Second Future Phase: To prolonge the EUREKA lines from the above 3. terminals until Union Station, by-passing the Metro-rail lines, and to complete the Wagon EUREKA network by connecting the 4th. listed Airport Washington National Airport to Union Station.

Advantages of Wagon EUREKA : Comfort of Passengers, and safeguard of cargoes, by its body's permanent levelness - Free positive and negative accelerations by its underframe engaged in successive downgrades and upgrades - Uninterrupted Traffic in Urban Areas and in Highways, through ATLAS interchange - Unlimited Works' opportunities, savings of Energy, and profits.
In this specific PROJECT, it is useful to stress the possibility of accelerations beyond the top 1.4 m./sec.^{2} permitted in conventional almost horizontal tracks and roads, decreasing for example one hour of travel time to few minutes.


PROJECT of Wagon EUREKA Network
Straight Distances Miles
1) Orange Line East Falls Church Metro Station to Dulles International Airport Wagon EUREKA Station = 16.
2) Green Line Greenbelt Metro Station to Friendship International Airport Wagon EUREKA Station = 17.5
3) Blue Line and Orange Line Potomac Avenue Metro Station to Andrews Airport Wagon EUREKA Station = 7.5
PROJECT First Phase - Total Miles: 41.0
1) Wagon EUREKA Station at Dulles International Airport
B.C.D.E. change of way
70. meters 1-8-9 through traffic
ATLAS Interchange
(right-turn lane)=(3) (left-turn lane)=(4)
Wagon EUREKA - Electric Vehicle
1) Orange Line East Falls Church Metro Station
4) Wagon EUREKA Station at Washington National Airport
3) Blue Line and Orange Line Potomac Avenue Metro Station
3) Wagon EUREKA Station at Andrews Airport
UNION STATION
2) Green Line Greenbelt Metro Station to be connected with Wagon EUREKA Station at Friendship International Airport
Future Second Phase Wagon EUREKA Network
Straight Distances Miles
By-passing the Metro-Rail links to complete the Wagon EUREKA Network until Union Station from:
1) East Falls Church Metro Station = 8.
2) Greenbelt " " = 10.5
3) Potomac Avenue " " = 1.5
4) Washington National Airport = 4.
Total Straight Miles = 24.0

SECOND INITIATIVE of emergency importance to reach
********** National Energy Independence.

Solar Mirrors Concentrators settled in the Earth's synchronous Orbit, focusing SUN radiation almost 24 hour/day on Photovoltaic Panels at Ground level would promote their efficiency to the range of 20 KWh. per square meter per day.
For example: 120 Solar Mirrors settled as above, each one illuminating 10 square Km. of Photovoltaics by the quoted efficiency, would generate 8.76 T.KWh. per year (T.=Tera =Trillion), = the total energy of every kind used recently in one year in The U.S.A. Apart considerations of economics, environment, etc. the Fossil Fuels saved from extermination through the FREE Solar FUEL, will be available in the future, together with other natural resources, as Guaranty of the Dollar: Natural Resources STANDARD replacing the obsolescent Gold Standard.
To be concerned with the problem of time : To fix 120 Solar Mirrors, as outlined, and complementary Photovoltaics, a lapse of 50 years may be required.

Progress in Photovoltaics: Nearly half of the Solar
********** radiation arrives to the Earth with wavelenghts longer than 1.1 Microns (273 T. Herz frequency): these Infra-Red photons are weak and cannot promote Electrons into the Conduction Band of a Silicon Solar Wafer with a Band-Gap = 1.12 Electron-Volt. They may be exploited in a wafer of lower Band-Gap material than 1.12 Electron-Volt
Stronger Photons with energy above 1.12 E.V. are able to free Electrons in a Silicon Wafer, but their excess of energy generates HEAT = a loss. Together with the lost Photons reflected by the Wafer surface the above inconveniences explain the low efficiency of Photovoltaics = about 10 % of the Sun power above 1 KW/m.^{2} during Sunshine.
Under experiment 2. Solutions to promote efficiency: Either SERIES or PARALLEL of 2, 3, or more Wafers of different materials with decreasing Band-Gaps: See joint OUTLINE -

To be stressed the advancing progress in THIN FILM Photovoltaics with efficiency until now *********
below Wafers', but with the advantages of simpler fabbrication, less required material, and low cost.

DEFINITIONS : Electron Volt (EV.) =Energy of
********** an Electron accelerated under a Potential of 1 Volt - Band-Gap = Energy needed by a Photon to free an Electron from its atom and promote it into the Conduction Band. Band-Gap of a Silicon (Si.) atom = 1.12 EV. - Hole : Atom positively charged, having lost a negative Electron - Positive-type with AFFINITY for positive Holes = A layer of an Element doped with traces of another Element having less valence Electrons - Negative-type with AFFINITY for negative Electrons = A layer of the Element doped with traces of another Element having more valence Electrons - Wafer : Formed by the 2 layers Flow of electrical Current through the external circuit provoked by excess of free Electrons in the n-type layer, going to the p-type layer to recombine with Holes.

SERIES of SOLAR WAFERS in declining order of BAND-GAPs

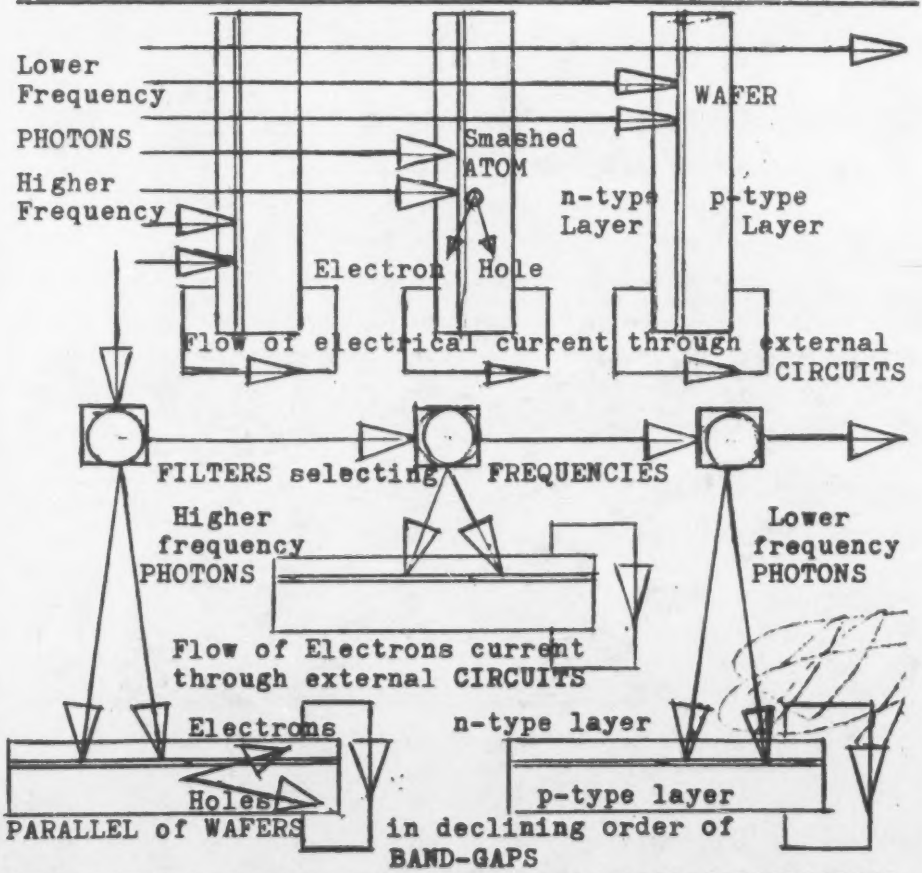


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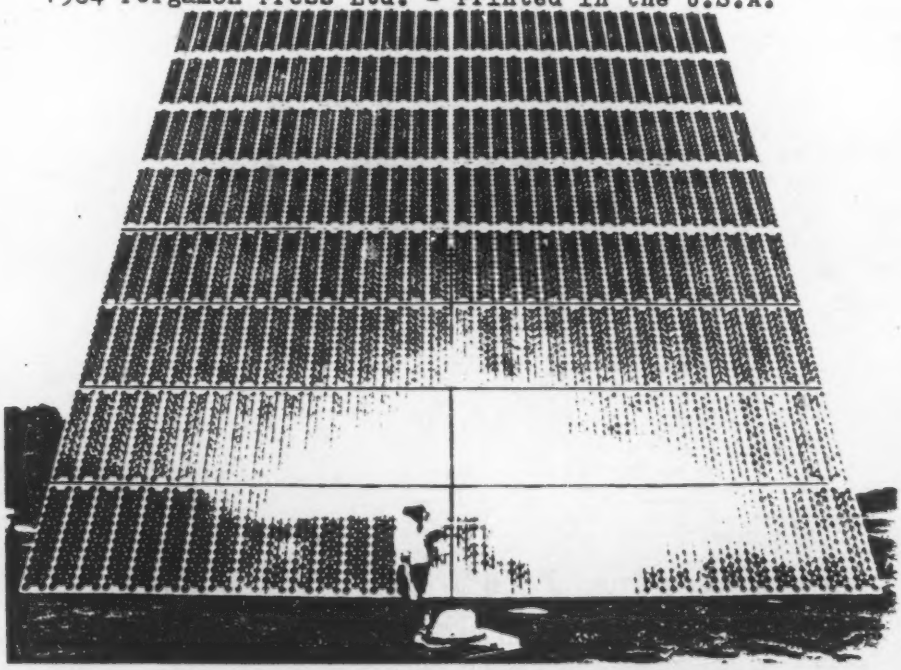
PHOTO OF THE MONTH

SOLAR ENERGY - Vol. 32. No. 6. p. 685.
1984 Pergamon Press Ltd. - Printed in the U.S.A.

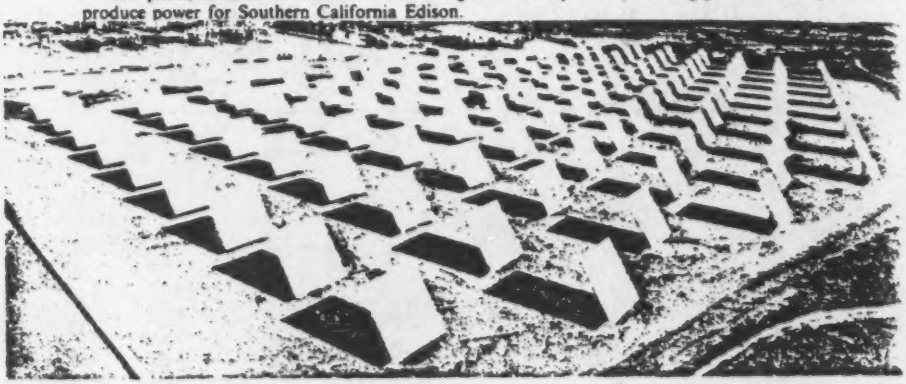


View of panel consisting of 256 modules with 35 cells in every module.

1 MW Photovoltaic Power Plant in Operation

This photovoltaic power plant, installed on 20 acres near Victorville, California, by ARCO Solar, Inc., consists of 108 trackers which orient photovoltaic panels toward the sun throughout the day.

The plant, rated at 1 MW and three times greater than presently existing photovoltaic systems will produce power for Southern California Edison.



108 panels installed on 20 acres near Victorville, California, by ARCO Solar.

ARCO'S SHORTCUT TO CHEAPER SUN POWER

FORTUNE - February 4. 1985. - by Brian Dumaine -

The oil company is first on the market with a low-cost photovoltaic panel that could make solar power economic by 1990.

ATLANTIC RICHFIELD, the $25-billion-a-year petroleum giant, has begun producing a new photovoltaic collector that's electrifying the solar energy industry. Since the 1950s the industry has made photovoltaic cells, which convert sunlight into electric power, by a labor-intensive process using high-grade silicon. The price of the collectors has fallen to a mere one-thirtieth of the price a decade ago, but the power they produce is still too expensive to compete with electricity supplied by utilities—it costs about 50 cents a kilowatt-hour vs. a U.S. average of 5 cents or so for utility power.

Nevertheless, a record $100 million worth of photovoltaic collectors, used to power water pumps, microwave relay towers, and other facilities beyond reach of the utility grid, were sold in the U.S. last year. And Atlantic Richfield's Arco Solar subsidiary, which already has an impressive 45% of that business, thinks its new "thin film" photovoltaic modules will enable solar electricity to compete with kilowatts from fossil and nuclear power stations as early as 1990.

The silicon for conventional photovoltaic collectors is made the same way as silicon for semiconductor chips. It's grown in a sausage-like single crystal and then sawed into wafers. The wafers are placed in rows on a sheet of glass and must then be connected by hand with wires. Arco Solar's new Genesis photovoltaic modules use "amorphous" silicon, which consists of tiny particles with no crystalline structure. Though it typically converts less of the sunlight striking a surface into electricity than single-crystal silicon does—about 5% vs. 11%—amorphous silicon promises savings in production costs that outweigh this disadvantage. Using a proprietary process developed in its labs, Arco Solar sprays amorphous silicon in a gaseous state directly onto a sheet of glass to which a wire grid has already been applied in a process somewhat like silk-screen printing.

Little silicon is needed. A conventional wafer is three or four times the thickness of a human hair, while Arco Solar's sprayed film is only a three-hundredth as thick as hair. When production hits bigger volumes in the next few years, Arco Solar says, its thin-film modules will cost half as much to make as conventional photovoltaic collectors with the same generating capacity. Other companies have been working on amorphous silicon devices for five years, and some are already used in watches and calculators. But Arco Solar in late December became the first to ship commercial quantities of large thin-film modules. A new factory at Chatsworth, California, can produce about 100,000 one-foot-square modules a year, each retailing at $100 and capable of generating five watts of electricity in average sunlight.

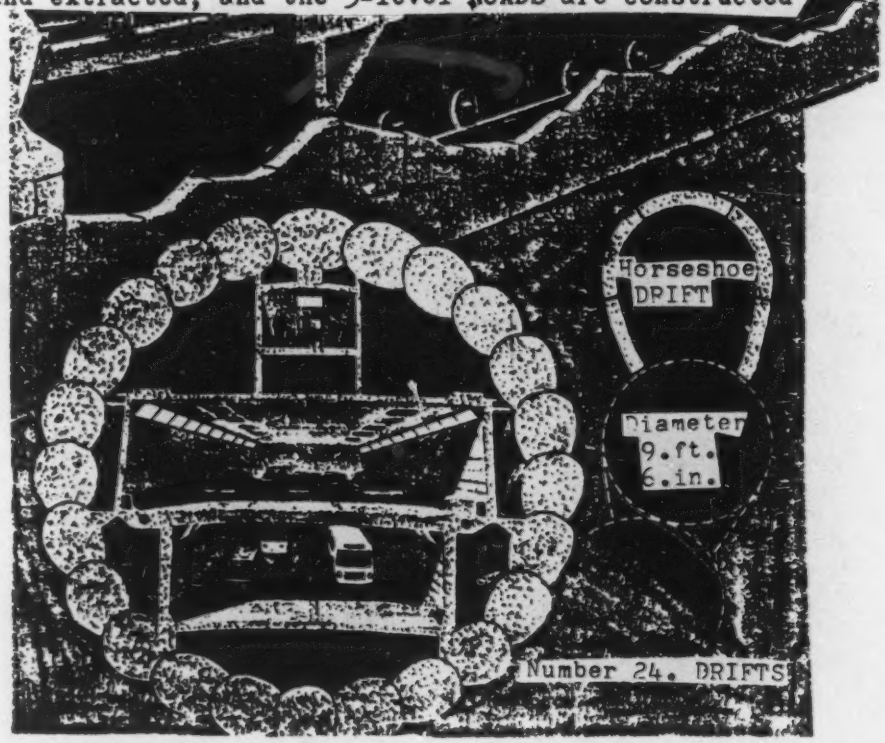
By early 1986, Arco Solar hopes to be producing a more efficient one-by-four-foot, 30-watt module suitable for remote communications towers and for some of the electrical needs of houses outside the power grid. The panels already supply cheaper electricity than most diesel generators. Arco Solar also has a prototype of a thin-film module that looks like tinted glass. Architects are toying with the idea of using tinted photovoltaic modules in skyscraper windows that would help power lights and office equipment. The silicon film would provide a bonus—insulation.

The big money eventually would be made with huge arrays of thin-film modules producing electricity to supply electric utilities.

tunnel of tubes

POPULAR SCIENCE - July 1984 -

Tunnel of TUBES called DRIFTS for SEATTLE super-highway
Tunnel Inside Diameter = 63. ft.
" Outside " = 82. ft.
3. levels of ROADS : 1,500 ft. length
Lower level = 2-lane Road ; Middle level = 3-lane Road
Upper level for Bicycles and Pedestrians
A $. 110 M. Project to be completed for Summer of 1986
A RING of 24. Tubes (DRIFTS) penetrates the RIDGE .
The Drifts, horseshoe section, diameter 9. ft. 6. in. are excavated by a SHIELD tunneling machine, guided by a LASER beam. The Drifts are lined with precast concrete and then filled with concrete. After the RING of 24. Drifts is completed, the material inside is excavated and extracted, and the 3-level ROADS are constructed



Honorable Chairman and Members of the COMMITTEE
****

I am Mr. Antonino Lafata Sottile Ph. Doctor of Engineering

Past year 1984 is recorded as Centennial Anniversary of the Invention of the modern Automobile, with its internal combustion engine (OTTO cycle).
Year 1984 should be recorded as Decennial Anniversary of my Invention:"WAGON EUREKA", and 1974 as the year when the CAR was reinvented.
To build a Wagon EUREKA prototype constitutes the first of my two Initiatives requiring $. 25. Millions of Appropriations.
Wagon EUREKA is essential for the operation of LEANWAY, my Invention: A new kind of Subway assuring FREE positive and negative accelerations, exploiting GRAVITY.
Here is an exemplar of my booklet: Leanway - A Leaning Subway, the year 1974 I presented to Congress, Scientific Organizations, Universities, 27 Metro Areas in the USA., Industries, etc. My plan was to have the Leanway, adopted for the Washington Metro Rail, and then to spur General Motors, Ford, Chrysler and others, to build in Series, plenty of Standard Leanways, and sell each one at a price of $. 1. Billion. In my opinion, this low price could have generated in the World a demand of thousand Subways, providing enormous opportunities of Works, and advantaging the international Trade of the USA.
Now who could buy in the World a subway of the kind built in washington, at the astronomical price= $. 14 Billion ?

On page 3 of my statement I outline a Tunnel Network, connecting the central Terminal of Union Station to the 4 important Airports around Washington: Dulles, Friendship, Andrews, and National. Travel times shortened to few minutes, accelerating by gravity, but letting the Project open for next Century advanced technological possibilities.
As you know, there is a proposition of a Tube coast-to-coast of the USA.: Travel time= 21 Minutes. Top speed= 14,000 mi/h. flying on the electro-magnetic field through vacuum.
I must caution that the above Network, as well as my other Project to eliminate all stopping lights in the Traffic by means of Wagon EUREKA and ATLAS Interchange, both shown on page 3, are not Science Fiction. They require attention of EMERGENCY importance, considering that the traffic of vehicles, at a rate of increase of 10 Million units/year, will double in 10 years. The Traffic could result impossible.

My second Initiative projects to SETTLE Solar Mirrors in Earth's synchronous Orbit to get Sun night-and-day on selected spots of ground surface, multiplying the efficiency of Photovoltaics.
I must caution that a lapse of 50 years would occur to settle the required Solar Mirrors and related Photovoltaics, in order to cover the total Energy of every kind consumed in the USA.
So it is urgent to begin as soon as possible with the first Solar Mirror experiment.

On page 5 of my statement I detail recent suggestions (See NASA Tech Briefs) to exploit a larger BAND of FREQUENCIES in the Solar radiation.
Instead of only one Silicon Wafer, to dispose 3 Wafers (in Series or in Parallel) of different materials in decreasing order of BAND-GAPS.
To notice advancing progress in THIN FILM Photovoltaics wich are less efficient than Wafers, but require less material, simpler fabbrication and are low cost.

There are 3 joint pages in my Statement :
1) Photo of the Month by the Journal of Solar Energy : 1 Megawatt Photovoltaic Plant operating in California by Arco Solar
2) Extract from Fortune Magazine :"Arco Solar is first on the market with low cost photovoltaic panel to make Solar power economic by 1990.
3) Extract from Popular Science Magazine: Tunnel of Tubes for SEATTLE Super-Highway; 3-level Roads. A challenge for Engineering.

Personally I regret that never has been given due consideration to my propositions in the Energy yearly Report, that goes to the FLOOR.
Instead the Reports, repleted with Nuclear and Pork-Barrel Public Works, have been like hitting by only one stone, two Birds: The United States and myself.

So I urge Authorities and Staffers responsible to appreciate my efforts and my Projects, in the interest of this COUNTRY.

THANK YOU
****

Senator STENNIS. Any other statement to go in the record?

All right, ladies and gentlemen. Thank you very much for this experience—I thank you for the committee as well. It is only under urgent circumstances I have already described to you that I leave you, but I must go now.

[Applause and standing ovation.]

[Whereupon, at 11:33 a.m. Tuesday, April 2, the hearings were concluded and the subcommittee was recessed to reconvene at the call of the Chair.]

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